

Computer Courses and Training Office Applications Based on LMS of Early Childhood Education Teachers

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Abstract

At this time the world is faced with the phenomenon of digital disruption, namely a situation indicated by the movement of the industrial world or job competition that is no longer linear. In the field of courses and training, there are also online courses and training services that can be accessed via the web/page. The service provider is not an educational unit, but several experts in their fields are joined by several experts in the field of information and communication technology to create course and training services that can be accessed via electronic devices. One of the development

of courses and training is training-based courses and training *Learning Management Systems*(LMS) that allows instructors and/or students to share material, submit and return assignments, and communicate online. Results of research and development of computer-based course and training models *Learning Management System*(LMS) which has been piloted shows that the level of practicality of this model is very good according to the instructors and organizers. learning outcomes of courses and training can improve the skills of early childhood education teachers in office application computer courses.

Keywords: Courses and training, Learning Management System, Early Childhood Education Teacher

INTRODUCTION

Institute Courses and training as a non-formal education unit, it is held for people who need knowledge; skills, life skills, and attitudes to develop themselves, develop their professions, work, independent businesses, and/or continue their education to a higher level. Courses and training are teaching and learning activities as well as school. The difference is that courses and trainings are usually held for a short period of time and only to learn one Skills certain. Many courses and trainings are held by the community, institutions, and organizations independently in order to serve the community who for some reason are less fortunate in their lives so that they do not have skills, are unemployed or work in unfavorable positions. At this time the world is faced with the phenomenon of digital disruption, namely a situation indicated by the movement of the industrial world or job competition that is no longer linear. Changes occur very quickly and fundamentally, in the field of education, the era of disruption has encouraged and even "forced" the digitalization of the education system. In the field of courses and training, the current era of disruption has also given rise to online courses and training services that can be accessed via the web/website of service providers. The service provider is not an educational unit, but several experts in their fields joined by several experts in the field of information and communication technology to create course and training services that can be accessed through electronic devices such as computers, laptops and communication devices.

The results of a preliminary study by researchers from February to March 2019 in South Sulawesi Province through a survey method using an online instrument/questionnaire based on google form, related to online learning organized by course and training institutions, data was obtained, only 15% of course and training institutions had implemented online learning and 85% still provide conventional course and training services, both in terms of services and in the learning process. Researchers also conducted direct observations and interviews related to the

implementation of courses and training based on Learning Management System. Based on the results of observations and interviews, there is no course and training institution that organizes courses and training based on Learning Management System. This is due to several problems faced by course and training institutions, namely (1) an internet network that does not exist, (2) students do not yet have electronic devices to access online course learning, (3) the costs used to provide equipment and training, expensive internet network, and (4) educators (instructors) who do not understand learning in the main network-based *Learning Management System*.

METHODS

The approach and type of research that will be used is research and development using the concept of product development from ADDIE According to Branch (2009:2) which consists of 5 stages, namely (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. The scope of this research is to determine the level of validation, the level of practicality and the level of effectiveness of the learning model based on courses and training *Learning Management System*. The theories used are as follows; 1) Cognitive Constructivism based on Jean Piaget, (1965), and 2) Social Constructivism based on Lev Vygotsky, (1925a). 3) Progressivism which states that humans have the ability to develop and perfect their environment by applying their intelligence (Gerald Lee Gutek, 2010), 4) *Learning Management Systems* (LMS) is a web-based system that allows instructors and/or students to share materials, submit and return assignments, and communicate online (Lonn and Teasley, 2009).

The instruments used in this study were 3 kinds as follows:

- a. Instrument validation by linguists, materials experts and media experts. This process is carried out to test the level of validity of the model script and the product model that is compiled.
- b. Instrument the practicality of the model by students and instructors. This process is carried out to test the level of practicality in the implementation of the learning model.
- c. The instrument effectiveness of the model by the results of the pretest learning assessment before applying the learning model and the posttest results after following the learning model.

The data collection technique was carried out according to the stages in the ADDIE model development procedure as described below.

- a. In the Analysis stage, the data collection technique used is using a Google form-based questionnaire, then unstructured interviews are carried out, and direct observations are made to course and training institutions.
- b. At the design stage, the data collection techniques used are discussion, focus group discussion.
- c. At the development stage (Development) The data collection technique used is a Questionnaire which will be filled by media expert validators, material expert validators, and linguist validators.
- d. At the implementation stage (Implementation) The data collection technique used is a Questionnaire which will be filled by the instructor and students.
- e. At the evaluation stage (Evaluation) The data collection technique used is a Questionnaire which will be filled by course and training students related to the evaluation of the implementation of learning by the instructor. And the pretest and posttest instruments to measure the effectiveness of the model learning that has been given to students.

The data analysis technique was carried out by means of qualitative data analysis and quantitative data analysis for each stage in the ADDIE procedure as described below.

- a. At the Analysis stage, the data analysis techniques used are: Qualitative and quantitative. preliminary study instrument that has been filled in by the respondent; 1) course and training providers, related to the implementation of courses and training that have been carried out, both online and offline. 2) Instructor regarding the use of the application *Learning Management System* in learning.
- b. At the design stage, the data analysis techniques used are qualitative. Model and product design which has been written by the researcher is then assessed by the supervisor, based on input or suggestions then corrected, and produces data in the form of qualitative data.
- c. At the development stage (Development) The data analysis technique used is Qualitative and quantitative. the validation instrument that has been given and has been filled in by media expert validators, material expert validators and language validators is then analyzed using an excel application (quantitative data) and inputs or suggestions are analyzed and produce data in the form of qualitative data.
- d. At the implementation stage (Implementation) The data analysis technique used is Qualitative and quantitative. Data collection instruments filled out by the instructor on aspects of use model of courses and training based on the Google Classroom

Learning Management System application, the results of data analysis in the form of quantitative data and qualitative data.

- e. At the evaluation stage (Evaluation) The data analysis technique used is Qualitative and quantitative. Data collection instruments filled out by students on aspects of use and utilization model of courses and training based on the Google Classroom Learning Management System application as a learning medium. And the results of the pretest and posttest of students after following the learning model. The results of data analysis in the form of quantitative data and qualitative data.

RESULTS AND DISCUSSION

RESULT

1. Expert Validation Results

Validation carried out by five (5) experts/experts/practitioners is an activity of assessing the experts on the learning model products that have been made. Experts were asked to validate all model products that had been made in the previous stage. Suggestions from experts/experts/practitioners are used as a reference in the revision of the model product.

The categorization of the validity of the model is quoted from Sugiyono (2017:165) as follows:

Validity Categorization Table

Very Invalid (STV) if the score	:	0	–	\bar{x}	1
Invalid (TV) if score	:	1	–	\bar{x}	2
Sufficiently Valid (CV) if the score	:	2	–	\bar{x}	3
Valid (V) if the score	:	3	–	\bar{x}	4
Very Valid (SV) if the score	:	4	–	\bar{x}	5

Average Results of Expert Validation of Model Books and Curriculum Materials

Assessment Aspect	(ai)	\bar{x}	Note:
1. Model Book Components	4.2	4.09	SV
2. Curriculum	4.1	4.09	SV
3. Contents	4.2	4.09	SV
4. Learning	4.3	4.09	SV
5. Interaction and Feedback	3.7	4.09	V
Total Value	20.5		

Average	4.09	SV
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The average value of the total validity of the model book and curriculum according to the material expert validator for all aspects of the assessment is obtained = 4.09 based on the validity criteria mentioned above, this value is included in the Very Valid (SV) category, which is at 4 5. From all aspects of this format, the model book and curriculum model courses and computer training for LMS-based office applications in supporting skilled PAUD teacher human resources are declared to meet the validity criteria. \bar{x}

Average Results of Media Expert Validation on Model Books and Curriculum

Assessment Aspect	(ai)	\bar{x}	Note:
1. Graphical Eligibility Component	3.8	3.65	V
2. Book Cover Design	3.4	3.65	V
3. Book Cover Typography - The letters used are attractive and easy to read	3.9	3.65	V
4. Book Cover Illustration - Reflecting the contents of the book	3.3	3.65	V
5. Book Content Design - Book Content Layout	3.6	3.65	V
6. Book Content Design - Book Content Typography	3.9	3.65	V
Total Value	21.9		
Average	3.65		V

The average value of the total validity of model books and curriculum according to media expert validators for all aspects of the assessment is obtained = 3.65 based on the validity criteria mentioned above, this value is included in the Valid (V) category, which is at 3 4. For all aspects of this format, the model book and curriculum model courses and computer training for LMS-based office applications in supporting skilled PAUD teacher human resources are declared to meet the validity criteria. \bar{x}

Average Media Expert Validation Results on the Google Classroom LMS Application

Assessment Aspect	(ai)	\bar{x}	Note:
1. Application Eligibility Components	3.7	3.85	V
2. Software Engineering Aspect	3.9	3.85	V
3. Visual Communication Aspect	3.9	3.85	V

4. LMS Application Aspects - Google Classroom	3.9	3.85	V
Total Value	15.4		
Average	3.85		V

The average value of the total validity of the Google Classroom LMS Application according to media expert validators for all aspects of the assessment is obtained = 3.85 based on the validity criteria mentioned above, this value is included in the Valid (V) category, which is at 3 4. With all aspects of this format, the Google Classroom LMS Application on the model and curriculum model of courses and computer training for LMS-based office applications in supporting skilled PAUD teacher human resources is declared to meet the validity criteria. \bar{x}

Table 4.30 Average Results of Material Expert Validation in Guidebooks for Instructors

No	Assessment Aspect	(ai)	\bar{x}	Note:
1	Learning Based Learning Management System (LMS)	4.00	4.00	SV
2	Use of LMS Applications in Courses and Training	4.00	4.00	SV
3	Interface (LMS Application View)	4.00	4.00	SV
4	Graphic Design and Audio Visual	4.00	4.00	SV
Total Value			16.00	
Average			4.00	SV

For the average value of the total validity of the Guidebook for Instructors according to material expert validators for all aspects of the assessment, it is obtained = 4.00 based on the validity criteria mentioned above, this value is included in the Very Valid (SV) category, which is at 4 5. If viewed from all aspects of this format, the Guidebook for Instructors is declared to meet the criteria for validity. \bar{x}

Average Validation Results of Linguists on Model Books, Curriculum and Manuals

No	Assessment Aspect	(ai)	Note:
1	Language on Model Book	4.90	SV
2	Language in the Model Curriculum	4.90	SV
3	Language in the Guidebook for LKP Managers	4.95	SV
4	Language in the Instructor's Guide	4.95	SV

5	Language in the Guide for Learners	5.0	SV
Total Value		24.70	
Average		4.94	SV

For the average value of the total validity for the aspect Language in Model Books, Curriculum and Guidebooks all aspects of the assessment obtained = 4.94 based on the validity criteria mentioned above, this value is included in the Very Valid (SV) category which is at 4 5. If viewed from all aspects of this format, then for the Language aspect of the Model Book, Curriculum and the Guidebook is declared to meet the criteria of validity. \bar{x}

2. Model Practicality Test Results

The practicality test in this model trial uses two instruments, namely a questionnaire on the practicality of each material provided by the instructor filled out by students related to the practicality of the course learning model and computer training for office applications based on LMS (google classroom) taught by the instructor, and a questionnaire on the practicality of each material. which is filled by instructors related to the management of learning models for courses and computer training based on LMS (google classroom)-based office applications in supporting human resources for skilled Early Childhood Education teachers. Criteria Assessment by students by giving a value to the instrument with the following information: 4= Strongly Agree, 3 = Agree, 2 = Disagree, and 1 = Disagree. The results of filling out this practicality questionnaire are described as follows:

P1	M1	%	M2	%	M3	%	M4	%	M5	%	M6	%	M7	%	M8	%	Average
Strongly agree	16	53.33	14	46.67	12	40.00	13	43.33	20	66.67	17	56.67	17	56.67	16	53.33	52.08
Agree	14	46.67	15	50.00	15	50.00	17	56.67	10	33.33	12	40.00	13	43.33	13	43.33	45.42
Disagree	0	0.00	1	3.33	2	6.67	0	0.00	0	0.00	1	3.33	0	0.00	1	3.33	2.08
Do not agree	0	0.00	0	0.00	1	3.33	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.42
	30		30		30		30		30		30		30		30		

The results of filling out the student response questionnaire from the entire material for the first question, obtained an average data of 52.08% of students saying Strongly Agree, 45.42% of students saying Agree, 2.08% of students saying Disagree and 0.42 % of students said Disagree.

The results of filling out the student response questionnaire from the entire material for the second question, obtained an average data of 62.92% of students saying

Strongly Agree, 34.58% of students saying Agree, 2.50% of students saying Disagree and 0% of participants students say Disagree.

The results of filling out the student response questionnaire from the entire material for the third question, obtained an average data of 49.17% of students saying Strongly Agree, 45.83% of students saying Agree, 4.58% of students saying Disagree and 0.42 % of students said Disagree.

The results of filling out the student response questionnaire from the entire material for the fourth question, obtained an average data of 54.17% of students saying Strongly Agree, 42.50% of students saying Agree, 2.08% of students saying Disagree and 1.25 % of students said Disagree.

The results of filling out the student response questionnaire from the entire material for the fifth question, obtained an average data of 60.00% of students saying Strongly Agree, 37.92% of students saying Agree, 1.67% of students saying Disagree and 0, 42 % of students said Disagree.

The results of filling out the student response questionnaires from the entire material for the sixth question, obtained an average data of 51.67% of students saying Strongly Agree, 44.17% of students saying Agree, 4.17% of students saying Less Agree and 0% of participants students say Disagree.

The results of filling out the student response questionnaire from the entire material for the seventh question, obtained an average data of 52.08% of students saying Strongly Agree, 43.33% of students saying Agree, 4.58% of students saying Disagreeing and 0% of participants students say Disagree.

The results of filling out the student response questionnaire from the entire material for the eighth question, obtained an average data of 57.08% of students saying Strongly Agree, 40.42% of students saying Agree, 2.50% of students saying Less Agree and 0% of participants students say Disagree.

The results of filling out the student response questionnaires from the entire material for the ninth question, obtained an average data of 58.75% of students saying Strongly Agree, 39.58% of students saying Agree, 1.67% of students saying Disagreeing and 0% of participants students say Disagree.

The results of filling out the student response questionnaire from the entire material for the tenth question, obtained an average data of 50.42% of students saying Strongly Agree, 45.42% of students saying Agree, 3.33% of students saying Disagree and 0.83 % of students said Disagree.

3. Model Effectiveness Test Results

Effectiveness test In this study, taking data from the design *One-Group Pretest-Posttest Design*. Data collection on the results of this effectiveness was measured using

the results of the pretest which was carried out before being given treatment and the posttest which was carried out after being given treatment for each learning series. Thus the results of the treatment can be known more accurately. To eliminate bias from the research results, the pretest and posttest will be conducted for four sessions of learning materials. One-Group Pretest-Posttest Design Schematic.

Research Hypothesis:

Ho : There is no average difference between the Pretest and Posttest learning outcomes, which means that there is no effect of the LMS-based course and training model in improving learning outcomes and office application computer skills for Early Childhood Education Teachers.

Ha : There is an average difference between the pretest and posttest learning outcomes, which means that there is an effect of the LMS-based course and training model in improving learning outcomes and office application computer skills for Early Childhood Education Teachers.

The basis for decision making in the Paired Sample T Test, namely:

1. If the significance value (2-tailed) < 0.05 then Ho is rejected and Ha is accepted.
2. If the significance value (2-tailed) > 0.05 then Ho is accepted and Ha is rejected.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre_Test_Sesi_1 - Post_Test_Sesi_1	-34.66667	53.54555	9.77604	-54,66091	-14,67243	-3,546	29	.001

The results of the Paired Sample T Test for this 1st session, obtained a significance value (2-tailed) = 0.001. This indicates that the significance value (2-tailed) < 0.05, so Ho is rejected and Ha is accepted. This means that there is an average difference between the learning outcomes of Pretest and Posttest session 1, and this means that there is an effect of the LMS-based course and training model in improving learning outcomes and office application computer skills for Early Childhood Education Teachers session 1.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Test Session 2 - Post Test Session 2	-81.33333	86.61183	15,81308	-113.67472	-48,99194	-5,143	29	,000

The results of the Paired Sample T Test for this 2nd session, obtained a significance value (2-tailed) = 0.000. This indicates that the significance value (2-tailed) <0.05, so H_0 is rejected and H_a is accepted. This means that there is an average difference between the Pretest and Posttest learning outcomes in session 2, and this means that there is an influence of the LMS-based course and training model in improving learning outcomes and office application computer skills for Early Childhood Education Teachers in session 2.

DISCUSSION

Based on the ADDIE model development procedure used in this study, in the discussion section of the results of this study, three issues related to the development of the LMS-Based Office Application Computer Course and Training Model will be presented in supporting the HR of Skilled Early Childhood Education Teachers, namely: (1) achievement of research objectives, (2) limitations of the study, and (3) specific findings.

1. Achievement of research objectives

The discussion of the results of this study will explore four things related to the development of an LMS-based office application computer course and training model in supporting skilled Early Childhood Education Teacher HR, namely: (1) an overview of the level of need for an LMS-based computer course and office application training model, (2) the design of the LMS-based office computer course and training model, (3) to determine the level of validity of the LMS-based office computer course and training model (4) to determine the practicality and effectiveness of the LMS-based office computer course and training model. The four parts are:

- a) Description of Field Needs Development of LMS-Based Office Application Computer Course and Training Model.
- b) Overview of Design Development Course model and computer training for LMS-based office applications.
- c) Knowing the level of validity and practicality of the LMS-based computer course and training model for office applications.
- d) Knowing the Effectiveness of the Model Development of practicality Model courses and computer training for LMS-based office applications in supporting human resources for skilled Early Childhood Education teachers.

2. Research limitations

Some of the limitations in this research start from the model product script, which consists of model books, curriculum, guides for managers, guides for instructors and guides for students which are still in the form of traditional texts and have not been equipped with many supporting pictures from the text. Of course, this limitation will be refined at a later stage.

Furthermore, the limitation of this research is that the courses and training programs made in the trial process only consist of one type of course and training, namely the office application computer program. Of course this model can not only be used by certain courses and training, but can be applied by all non-formal education units, ranging from course and training institutions (LKP), Community Learning Activity Centers (PKBM), learning activity studios (SKB) and organizers. non-formal education providers who are not institutionalized but have a commitment to contribute to the intellectual life of the nation in this beloved country of the Republic of Indonesia.

3. Special findings

A number of constraints and specific findings in the process of implementing the trials in this study, are as follows:

- a) The implementation of this course and training learning model will run well, if it is supported by all parties, ranging from instructors, organizers, students. The support here starts from the learning preparation process, the learning implementation process, the evaluation process
- b) Organizer activities start from managing classes, interacting with students, interacting with instructors in dire need of skills related to information and communication technology, ranging from using laptops, cellphones, and internet connections.

CONCLUSION

The current government prioritizes human resource development as a positive step that must be supported. Open unemployment in Makassar City in 2018 reached 12.19% of the total workforce of 1,067,923 people (70.81% of the total population of 1,508,154 people), so the number of open unemployment in Makassar City is 130,179 people. Of course, unemployment is very influential on the economy and social society of a country. One of the causes of the high unemployment rate in the city of Makassar is the lack of job opportunities and the low skills and education level of job seekers. The quality of human resources is influenced by the low level of public education (working age population) is also one of the factors that increase the unemployment rate. This unemployment alleviation can be overcome by increasing Human Resources, one of which is through learning. In addition, the rapid development of information and technology, on the use of Online learning (online) is currently very much needed by the community or education providers, both formal education and non-formal education. Based on the results of research on the use of LMS-based learning technology can significantly improve the skills of students, especially in providing skills education amidst the limited facilities owned.

This model design consists of several products, namely model books, curriculum, guides for managers, guides for instructors and guides for students. The design of this model is based on the results of documentation studies and field studies. The design of this model has been validated by experts prior to the trial process. The results of the revision and input from the validator are then completed again so that they can be used as model products during model testing at the implementation stage.

Learning management system or learning management system (hereinafter referred to as LMS) is a server-based software program that interacts with a database containing information about users, courses and content. In a sense, it resembles other systems designed for e-commerce, human resources, payroll, and student records. What makes an LMS unique is its instructional nature. LMS provides a place for learning and teaching activities that occur in a seamless environment, which is independent of time and space boundaries. These LMS-based courses and training allow educational institutions to administer large numbers of fully online or blended (online parts and face-to-face sections) using a common interface course and a set of resources.

The level of validity for all aspects, ranging from material aspects, media aspects and language aspects to model book products, curriculum, guidebooks for LKP managers, guidebooks for instructors, and guidebooks for students meet the validity criteria. The level of practicality of the model by the instructors is on average agree to strongly agree starting with the Aspects of Clarity of Instructions for Use of Learning Implementation Plans in the LMS-based Course and Training Model, Aspects of

Competency Achievement and Learning Objectives of the LMS-based Course and Training Model, Aspects of Student Response during Learning in the Model LMS-based Courses and Training, Aspects Instructor's level of difficulty in Implementing LMS-based Course and Training Models. The level of effectiveness of the model from the four given learning sessions,

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