

# The Influence of Instructor Readiness, IT Capability, Support of LMS Content, and their Implications on E-Learning Effectiveness in a Corporate University of BUMN



Nilo Legowo, Edi Abdurachman, Iman Herwidiana K, Dyah Budiastuti

**Abstract:** Education is needed by every individual and organization in improving the knowledge and skills of human resources to support organizational learning, and the learning process can be done in meetings in the classroom or online using IT, commonly known as e-learning. This research aims to identify the role of instructor readiness in supporting e-learning effectiveness and the influence of Support LMS content and IT Capability on perceived usefulness and perceived ease of use to support system acceptance and the success of e-learning. This research employs quantitative method. A questionnaire was distributed to 399 respondents and the unit of analysis is employees who have used the e-learning system of the corporate university. The results of the research can reveal the influence of the readiness of Instructor and Support LMS content on the application of e-learning and how e-learning is used as a learning media for interactions between learners with the instructor. The successful application of e-learning requires the instructor readiness, which includes the mastery of the technological and pedagogical aspects as a requirement of skill in teaching by using LMS. The successful implementation of e-learning effectiveness is strongly influenced by attitude toward using LMS and employee perceptions of support content that can provide benefits and easy to use by participants that will influence the attitude of participants to learn with e-learning system in a corporate university of BUMN.

**Keywords :** LMS Content; Instructor Readiness, IT Capability, E-learning effectiveness, Corporate University.

## I. INTRODUCTION

Companies experience fast changes due to the increasingly tight business competition in the global era. The companies are required to be able to implement change management and innovation, and continue learning in order to survive in business competition. The needs of workers who have knowledge, skills, and abilities that are in line with the business direction of the companies are increasingly getting attention.

Many breakthroughs in the utilization of information technology have been implemented by companies to assist employees in solving problems related to the process of learning and training. One of them is the web technology to support educational process called e-learning. E-learning can be utilized to help improve the process and quality of learning in the companies so that the employees/learners and instructors can interact practically and effectively without having to meet face to face in the training center. Thus, the learning process becomes easier, faster, and cheaper.

Traditional training can no longer adjust the pace of organizational development. Therefore, technology has significant implications for improving organizational skills and employee development in meeting corporate business challenges [14].

The question arises whether the organization receives maximum benefits from e-learning systems. Despite the investment of some funds for developing e-learning strategies, organizations are not aware of the economic benefits gained. Empirical research is also needed to examine the effectiveness of e-learning training. Currently, evaluative research underlines that e-learning evaluation still has weaknesses. Given the initial cost of implementing such an enormous e-learning program, it is therefore important to conduct an evaluation study [13].

Previous research indicates that a training evaluation is successful if it can produce an effective and efficient organization. The effectiveness of learning in an organization can be measured with the indicators of Reaction, Learning, Behavioral changes and Business results [6].

The success of online learning is influenced by the acceptance of use or the satisfaction of the participants who need special attention. Additional research is needed to test the relationship of the end users/users of e-learning; for example self-efficacy;

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and perceived usefulness: the term user feeling towards the satisfaction of the learners is used [15].

Previous research shows that the level of acceptance and satisfaction affect motivation, which is an important psychological component of the success of learners. Information systems research shows that user satisfaction is one of the most important factors in assessing the success of system implementation [16].

With regard to awareness, the implementation of e-learning in Indonesia is at a sufficiently advanced level. The application of e-learning is growing among industrial and educational institutions.

The problem of the Indonesian Corporate University BUMN of state-owned companies in implementing e-learning is related to the low number of employees accessing LMS and utilizing e-learning as a means for learning and self-development.

This research is expected to reveal the readiness and effectiveness of e-learning implementation at a corporate University of state-owned companies. With the evaluation of the implementation of e-learning in the company, it is expected that the company can implement a particular strategy or further develop the e-learning in the future.

This research aims to obtain empirical data, analyze the data, propose a model of analysis and test the influence of the learner ability in terms of Technical (IT Capability), readiness of Instructor, and support LMS on the level of acceptance and use of e-learning and the effectiveness of e-learning in supporting the learning process of training participants at corporate university of state-owned companies

The research is expected to contribute to scientific and practical development in the field. It is also expected to contribute to the advancement of science and technology and provides benefits to the Corporate University of state-owned companies as a place of research.

## II. LITERATURE REVIEW

### A. E-Learning

The concept of e-learning is the provision of new classes equivalent to conventional classes in educational institutions. E-learning is an electronic learning activity that utilizes information and communication technology [9].

Learners' perceptions of e-learning are important for researchers as they help educational institutions such as schools, colleges and universities, and even organizations gain tangible benefits with an enhanced understanding of key factors influencing the use of the e-learning [8].

Many experts describe the definition of e-learning from various points of view. The absence of standards regarding definition and implementation of e-learning makes many people have a variety of concepts.

In the view of [4] e-learning is a type of teaching and learning activity that allows the delivery of learning materials to students by using internet media or other computer network media.

Explained that e-learning for training is vital in human resource management. E-learning can refer to all training activities that use electronic media or information technology [2].

E-learning enables participants to learn through computers in their places without having to attend class / lectures

physically. E-learning is delivered by using computer equipments.

E-learning covers a broad set of applications and processes, such as web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of contents via the Internet, intranet/extranet (LAN/WAN), audio and videotape, satellite broadcast, interactive TV, and CD-ROM. [11].

From the above definitions, it can be concluded that e-learning covers the activities of learning or training starting from the early process, the running process and evaluation after the learning process or the training using the electronic media and information technology through the Internet or intranet of an organization. E-learning enables participants to learn through computers in their places without having to attend classes / lectures physically. E-learning is delivered by using computer devices.

So, e-learning can be defined as distance learning that utilizes computer technology, computer networks and or the Internet. E-learning enables learners to learn through computers in their places without having to go to the classroom physically.

E-learning is the instruction and delivery of training with computers through the corporate internet network. Often, e-learning is understood as a form of web-based learning that can be accessed from the internet on the local network or the internet. Not only should E-learning materials be distributed online either through local or internet networks, they should also be distributed offline using CD / DVD media, which could also be regarded as the pattern of e-learning [10].

Theoretically, it is predicted that the higher level of learning effectiveness leads to learning that can be controlled and flexible. This becomes an advantage offered to e-learning participants in a virtual environment, assessing that the proposed learning environment with e-learning is more effective than the traditional environment regardless of the learning model used.

In addition, it proposes that the virtual environment is more effective when compared to conventional models, and the effectiveness of learning is measured by performance, self-efficacy, and user satisfaction.

When measuring the results of e-learning processes in organizations, it should be considered that e-learning is different from traditional training methods [1]. suggested that the current training process evaluation techniques can be expanded with e-learning methods. From the previous explanation, it can be concluded that the technique for evaluating e-learning is the same as evaluating other training solutions [13].

The measurement of e-learning outcomes can be done by using the classical Kirkpatrick model; traditional training or e-learning can be evaluated using four progressive levels Kirkpatrick [6]: Level 1: Reaction, Level 2: Learning, Level 3: Behavioral changes, Level 4: Business results, Level 5: ROI. These five levels are used as indicators in the variable of the effectiveness of e-learning which includes: Reaction, Learning, Behavioral changes, Business results, ROI. [12] recommended adding the fifth level of the corresponding Kirkpatrick model. The new V level is a measure of Return on Investment (ROI).

The development of elearning in education is part of innovation. In this innovation, basic components, such as time and space, can be used differently, and alternative solutions to conventional lectures and learning materials can be introduced including broadcasts and video-conferencing. This radical innovation requires a foundation of an effective LMS powered by internet connectivity [5].

### III. RESEARCH METHODS

The research approach employed to achieve the research objectives determined by using two scientific approaches, which are descriptive and verification research. Descriptive research, in this case, is used to describe the characteristics of the research variables to be studied. Meanwhile, the verification research approach explains the relationship between the variables used and developed to test the hypothesis in this study, aimed at finding a correlation or the relationship between several research variables in use.

The descriptive approach in this study is employed to find out the characteristics of variables of Instructor Readiness, Acceptance and Use of e-learning, IT Capability and support LMS, and e-learning effectiveness. Verification research is to test the relationship between variables that refer to the data field survey results to be used and developed to test the hypothesis in this study.

Quantitative method, which is based on positivism, is used to examine a population or a particular sample; the data collection uses research instruments and the analysis employs statistical data with the aim to test the hypothesis that has been set.

The research methods used in this research are the descriptive survey and explanatory survey. The unit of analysis in this study is the employees / training participants who use e-learning in the corporate University of BUMN companies.

The target population of this research includes BUMN employees who have participated in trainings using e-learning in corporate university. Therefore, the components of the research population are the large number of employees scattered throughout Indonesia, where the data source to get the amount of workforce of BUMN employees cannot be known for sure. In addition to the large number of members of the population, the complexity of the object derives from the nature and type of business that requires different restrictions.

The selected population includes companies with corporate universities at BUMN companies in Indonesia. Each category of state-owned enterprises is in place of data collection related to the learning process by using e-learning that is by implementing the Learning Management system

(LMS) in supporting learning / training to employees of companies.

The number of study population is based on the number of employees / training participants using e-learning. The participants are from five state-owned companies with corporate universities in Indonesia..

### IV. RESULTS AND DISCUSSIONS

Before the data is processed using multivariate, testing was done to determine the feasibility, whether the data meet the requirements related to data processing for the research. Testing objective is to ensure that various methods can be used on certain data so that the results of the multivariate process can be interpreted appropriately. The test conducted includes testing outlier, missing data, validity test, and reliability to meet the feasibility of measuring instruments. Outliers and missing data show that all indicators are eligible and can be used in multivariate methods.

The first criterion is the gender of the respondent. Out of the 399 respondents, 211 individuals are male or 53% and 188 participants are female or 47%.

The next criterion is the age of the respondents., 53 (13%) participants are < 23 years old, 225 (57%) are 24-30 years old, 80 (20%) participants are 31-40 years old, 28 (7%) are 41-50 years old, and 13 (3%) are 51-60 years old.

The third criterion is the last education of the respondents. Less than or equal to < D2 is 19 people (5%), <S1 / D4 is 134 people (33%), Bachelor S1 / D4 is 211 people (53%), S2 is 35 people (9%), and those with S3 educational background is 0 (0%).

The next criterion is the length of work in the company. Those who worked less than 2 years are 108 people (27%), between 2 -5 years are 137 people (34%), those working for 6-10 years are 98 people (25%), and those working for 11-15 years are 19 people (5%), those working for 16-20 years are 12 people (3%), and those working for > 20 years are 25 people (6%).

The last criterion is how many participants participated in the training with e-learning. 84 people (21%) attended training for 1 time; 226 people (57%) attended training 2-5 times; 52 people (13%) attended training 6-10 times; and 10 people (2%) attended training 11-15 times; 9 people (2%) attended training 16-20 times; and 18 people (5%) attended training > 20 times.

According to Ghozali (2015), the reliability of Cronbach's Alpha value is > 0.70 for confirmatory research; > 0.60 is still acceptable for exploratory research; and the value of Composite Reliability > 0.70 for Confirmatory research, 0.60 to 0.70 can be accepted for Exploratory Research.

**Table I. Cronbach's Alpha Reliability Test and Composite Reliability**

Variable	Cronbach's Alpha	Reliability if value > 0.7	Composite Reliability	Reliability if value > 0.7
Attitude Using	0.756	Reliable	0.845	Reliable
E-learning Effectiveness	0.793	Reliable	0.866	Reliable
IT Capability	0.817	Reliable	0.877	Reliable
Instructor Readiness	0.889	Reliable	0.911	Reliable

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Perceived Ease of Use	0.784	Reliable	0.847	Reliable
Perceived Usefulness	0.873	Reliable	0.905	Reliable
Support LMS Content	0.848	Reliable	0.897	Reliable

Based on table 1, Cronbach's Alpha Reliability Test and Composite Reliability obtained Cronbach's number greater than 7. Following the terms and conditions, it can be seen that the Cronbach's Alpha is > 0.70 (between 0 to 1). Thus, it is declared reliable.

Meanwhile, the reliability testing aims to see the consistency or reliability of variables in measuring the latent construct. The reliability evaluation reveals that the value of Composite Reliability and Cronbach's alpha meet the reliable requirements.

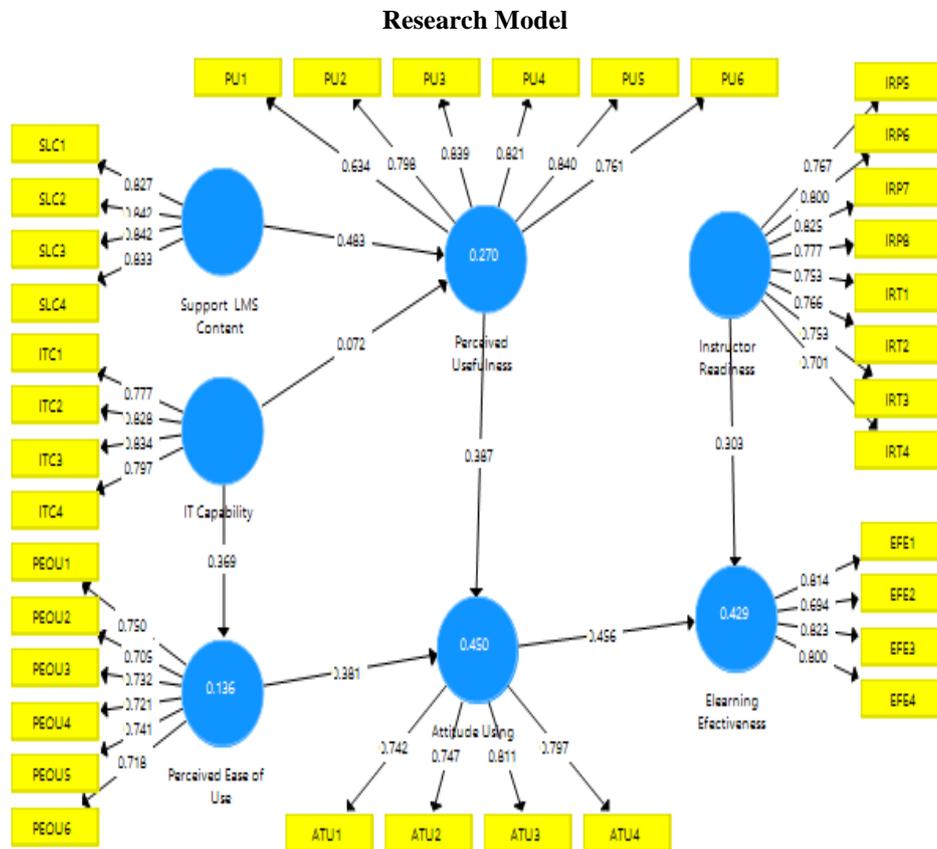


Fig.1. Parth Diagram Research Model

Table 2 serves as the main reference to test the hypothesis in this study. Testing criterion is rejected H0 if t-statistics / t-test

is bigger than t-table 1.966 or p-value ≤ 0.05. The results of testing of all hypotheses proposed in this study are as follows:

Table II. Result of Evaluation of t-Statistic and P-value

Hypothesis	t- Statistics (O/STDEV)	T table	P Values	T- Statistics << T- Table
IT Capability -> Perceived Ease of Use	6.83	1.966	0	Significant
IT Capability -> Perceived usefulness	0.763	1.966	0.446	not significant
Attitude Using -> e-Learning Effectiveness	6.541	1.966	0	Significant
Instructor Readiness -> e-Learning Effectiveness	6.122	1.966	0	Significant
Perceived Ease of Use -> Attitude Using	6.943	1.966	0	Significant
Perceived usefulness -> Attitude Using	5.155	1.966	0	Significant
Support LMS content -> Perceived usefulness	6.386	1.966	0	Significant

## V. CONCLUSIONS

Based on the discussion in the previous chapter, the following conclusions can be drawn:

The results show that the variable of Support LMS Content containing teaching material using learning management system affects the Perceived Usefulness, which means that support LMS content including teaching modules that can be learned by the participant affects the Perceived Usefulness use of the learning management system.

On the other hand, the variable of IT Capability of participants in learning using the learning management system with e-learning system does not affect Perceived Usefulness,

which means IT capability of the participants in the learning using the learning management system with e-learning system has no effect on Perceived Usefulness in the use of learning management system.

The variable of IT Capability of participants in learning using the learning management system with e-learning system affects Perceived Ease of Use, which means the IT Capability of participants in learning with e-learning system using learning management system affects the Perceived Ease of Use in the use of learning management system.

The variable of Perceived Usefulness of the participants in learning with e-learning system affects the Attitude toward Using, which means Perceived Usefulness of LMS system containing teaching material in learning management system affects Attitude toward Using in the attitude of using the learning management system.

The variable of Perceived Ease of Use of the participants in the use of LMS as a means of independent learning requires the support of easy-to-use applications to encourage interest and willingness to learn with e-learning system that can affect Attitude toward Using. It means that Perceived Ease of Use in the use of learning management system affects the Attitude toward Using in using LMS.

The variable of Attitude toward tusing of participants in learning with e-learning system affects the E-learning effectiveness as a way to measure the success of system applied in the company, which means attitude using which has the attitude in using learning Management system affects the e-learning Effectiveness of learning with e-learning system.

The variable of Instructor Readiness affects the e-learning effectiveness as a way to measure the success of system applied in the company. This means Readiness of Instructors that understand the technical and pedagogical aspects of teaching by using learning management system affects the e-learning effectiveness in learning with e-learning system.

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