Adoption of Various Frameworks for e-Learning Governance That Support the Readiness of e-Learning System Governance for Indonesia Higher Education

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Abstract: This research explains the factors that influence readiness to support the development of a new framework for e-Learning governance as an evaluation tool. this happens because of the paradigm of technological development that is fast demanding e-Learning to realize the best performance. However, there are problems of incapabilities in improving the quality and quantity of the required system in order to be a comprehensive assessment process to achieve satisfactory results. The solutions for these problems are by improving governance on the system being run. The Khan framework, the EDM domain (evaluate, direct, monitor) contained in the COBIT 5 and ISO / IEC 38500 frameworks make a whole new framework by combining components in each framework. The existing dimensions and domains can be adapted according to the needs of e-Learning governance to improve performance as a support for the readiness of the learning process in the e-Learning system in Higher Education, especially in Indonesia.

1 INTRODUCTION

A system that facilitates academic and non-academic activities is called e-Learning. E-learning is a teaching and learning process which is familiar to the community and is applied by educational institutions from elementary schools to universities (Sutanta, 2009)(Yacob et al., 2012)(Cheung and Lam, 2009). Rapid technological development demands that e-Learning can provide renewal that adapts to the current conditions in using the system anywhere and anytime. electronic media that facilitate e-learning, among others: internet, computers, mobile phones, CD-ROMs and many more(Kusdibyo and Leo, 2018)(Lee and Hung, 2015)(Santoso, 2008).

The current e-Learning system also supports traditional learning, these two methods support each other to obtain maximum learning methods in the learning process. In Higher Education, for example, by applying mixed mode to two learning methods, or also known as blend learning or hybrid learning, the learning process that combines online learning and classroom learning. The application of e-learning is common in educational institutions for now. This competitiveness is because every institution would like to present the best possible performance to represent their educational institutions and to attract those who

wish to join their institutions.

Improved e-Learning with dimensions that support the realization of the quality and quantity of the system using a framework evaluation tool. These dimensions are adopted based on situations and conditions in accordance with the governance requirements of the e-Learning system. The framework is also necessary to measure how effective and efficient the system implementation is. Due to the many types of frameworks, the researchers tried to combine frameworks that can adjust to the needs of e-Learning system governance evaluation for universities in Indonesia. With dimensions from the Khan framework and a supportive framework, the e-Learning governance framework will become a suitable framework for system evaluation.

2 LITERATURE REVIEW

2.1 Related Research

In organizations, e-Learning is crucial for business success(Chang and Uden, 2008). The success of e-Learning lies in governance in supporting business readiness. e-Learning governance is centered on

the principles of corporate governance and dimensions that have broader qualities, including rights, duties, and responsibilities that exist in corporate governance(Darking, 2006)(Darking et al., 2007). With e-Learning governance, the organization emphasizes aspects of pedagogical and didactic learning as well as on the characteristics of cognitive learning within legal and ethical boundaries(Chang and Uden, 2008). e-Learning is increasingly developing, many researchers conduct evaluations to update or recommend improvements to the e-learning system at each educational institution.

Research conducted by (Khan, 2003), created a framework called the Khan framework. According to Badrul Khan, the development of learning methods is very important, with the progress of information and communication technology. This framework produces a dimension that is used as a factor in e-Learning based on the state of e-Learning in the field of education. to evaluate the system, the Khan framework has 8 dimensions(Khan, 2003)(Pranata, 2005). Khan's framework dimensions include: technological, pedagogical, resource support, interface design, institutional, ethical, management, evaluation. Each dimension has a sub-dimension consisting of problems focused on certain aspects of the scope of e-Learning. The researcher made a combination of the COBIT 5 framework and ISO / IEC 38500 to support the dimensions of the Khan framework. according to the research of (Bianchi and Sousa, 2016) many committees employ framework that is widely implemented using ITIL, COBIT, & ISO, each of which has their own objectives and objectives in information technology governance. IT governance in Higher Education has not been widely discussed, especially in the previous literatures. Therefore, it is necessary to improve governance in e-Learning systems that are evaluated using e-Learning governance frameworks to ensure success in implementing e-Learning systems that are assisted by the direction of the dimensions of Khan's framework.

The research conducted by (Alaeddini and Kardan, 2010) and (Elameer and Idrus, 2010) stated that governance is required to harmonize e-Learning with business objectives and strategies using performance indicators in the learning process within the framework. Knowledge sharing based educational organizations supported by cost and effective and efficient support system infrastructure in the utilization of information technology. (Bianchi and Sousa, 2016) said that to support the e-Learning framework for governance in the system needed a governance model in the objectives of IT governance in the implementation of e-Learning. This research uses COBIT 5 and

ISO/IEC 38500. This is because COBIT is a complete framework and ISO/IEC 38500 has three main domains to manage information technology as well as COBIT 5, namely evaluate, direct & monitor.

2.2 Supporting Framework

Khan's framework adjusts existing dimensions to the needs of the system based on existing sub-dimensions within the scope of e-Learning. The systematic online planning, design, evaluation, and implementation process within the scope of the learning process actively fostered and supported is the success of e-learning. by creating a flexible learning process, e-Learning will be easily applied to the factors that exist within the scope of e-Learning. Those factors are categorized into 8 dimensions and have sub-dimensions that help in identifying many critical problems specifically in the e-Learning environment(Khan, 2003)(Pranata, 2005). Based on (Khan, 2003) and the research conducted by (Elameer and Idrus, 2010), the problems occur in a broad (general) scope of the e-Learning systems. Khan's framework does not explain governance for e-Learning which supports scopes that are categorized into 8 dimensions and sub-dimensions which are used according to the e-Learning governance requirements. Dimensions and sub-dimensions within the Khan framework that influence each other in e-Learning environments(Khan, 2003)(Pranata, 2005), among others:

Table 1: Khan Framework

TECHNOLOGICAL DIMENSION	PEDAGOGICAL DIMENSION
- Infrastructure Planning - Hardware - Software	- Content Analysis - Audience Analysis - Goal Analysis - Design Approach - Instructional Strategies - Organization - Blending Strategies

RESOURCE SUPPORT DIMENSION	INTERFACE DESIGN DIMENSION
• Online Support • Resources	• Page and Site Design • Content Design • Navigation • Accessibility • Usability Testing
INSTITUTIONAL DIMENSION	ETHICAL DIMENSION
• Administrative Affairs • Academic Affairs • Student Services	• Social and Cultural Diversity • Bias and Political Issues • Geographical Diversity • Learner Diversity • Digital Divide • Etiquette • Legal Issues
MANAGEMENT DIMENSION	EVALUATION DIMENSION
• People, Process and Product (P3) Continuum • Management Team • Managing e-Learning Content Development • Managing e-Learning Enviroment	• Evaluation of Content Development Process • Evaluation of e-Learning Enviroment • Evaluation of e-Learning at the Porgram and Institutional Levels • Assessment of Learners

E-Learning governance framework adopts COBIT 5 and ISO / IEC 38500 for governance. The COBIT (control objectives for information and related technology) framework is part of the audit and control association (ISACA) information system developed by the IT Governance Institute (ITGI). COBIT is a standard guide to information technology management practices and a collection of best practice documentation for IT governance that can help and control in bridging the gap between business risk, control needs and technical issues of interrelated stakeholders (auditors, managers, and users). According to Campbell, COBIT is a way to implement IT governance. There are many versions of the COBIT framework to date, the latest COBIT version 5 is used as a tool for IT governance implementation, namely as a management guideline with all domains contained within COBIT 5, including evaluate, direct, and monitor (EDM) for governance, and align, plan, and organize (APO), build, acquire, and implement (BAI), deliver, service, and support (DSS), monitor, evaluate domains, and assess (MEA) for management. COBIT 5 is a comprehensive framework that has a collection of best practices for IT governance and was published on April 2012. The COBIT 5 framework helps companies/organizations achieve key objectives in IT management and governance that are applied to optimize the value of information technology that aligns between the benefits are thereby optimizing the risks and resources used(Widjajanto et al., 2018).

The ISO / IEC (The International Organization standardization form and the International Electrotechnical Commission) system was formed specifically as a standard in the world, one of which ISO / IEC 38500 is an Australian standard released in 2008 originating from (US 8015) and the first international standard for governance guidelines manage IT(Ahuja and Chan, 2015)(Serrano et al., 2017). This standard also aims to provide principles for stakeholders when evaluating, directing, and monitoring information technology (Harris, 2010). IT governance in ISO / IEC 38500 has principles, among others: Responsibility, Strategy, Acquisition, Performance, Conformance, and Human behavior citeahuja2015security (Serrano et al., 2017) (Harris, 2010) (Rijati et al., 2017)(Mohamad and Toomey, 2016). as for the ISO / IEC 38500 has a director who has three main tasks in managing IT, namely (Harris, 2010) (Rijati et al., 2017)(Mohamad and Toomey, 2016):

1. Evaluate the use of IT from now to the future.

2. Direct the preparation and implementation of plans and policies to ensure the use of IT as a business goal.

3. Monitor planning by policies and performance.

3 ADOPTION THE FRAMEWORK

To support e-Learning governance that is not covered by the Khan framework, it is necessary to adopt a still common governance framework, namely the COBIT 5 and ISO / IEC 38500 framework which will produce an e-Learning governance framework. Based on the explanation of the framework and research on e-Learning above, the researchers conducted a combination design by adopting Khan framework(Khan, 2003)(Elameer and Idrus, 2010), ISO/IEC 38500(Alaeddini and Kardan, 2010)(Ahuja and Chan, 2015)(Harris, 2010)(Mohamad and Toomey, 2016), and 3 main domains on the COBIT 5 framework that has similarities to ISO/IEC 38500, namely the EDM (evaluate, direct, monitor) which can be applied on IT governance. This combination aims to make the e-Learning governance framework appropriate for the governance requirements of the e-Learning system used by Universities, especially in Indonesia.

In Figure 3.1 there is a combination of Khan's framework, ISO/IEC 38500, business processes on e-Learning, and 3 main domains of COBIT 5 which have similar domains with ISO/IEC 38500, namely evaluate, direct and monitor. implementation of the suitability of the e-Learning system by identifying existing problems in the scope of dimensions carried out in the e-Learning business process. the explanation of each dimension is specifically based on sub-dimensions in the framework khan. The e-Learning business process, including learning planning & curricula design, content development, learning delivery & learner coaching as well as assessment, evaluation & credentialing. dimensions and sub-dimensions that have been grouped will be adjusted to the phases that exist in the e-Learning business process. This will create new possibilities for each stage, dimensions will be able to have more than one stage topic, even with different sub-dimensions. From 8 dimensions, only 7 dimensions are used in adopting a new framework, namely the ethical dimension. The ethical dimension is not used because it does not include the supporting criteria in terms of the sub-dimensions described in Table 2.1. For governance requirements in the e-Learning environment applied, the ethnical dimension cannot be used .

In the adoption process, the 3 main domain cycles, namely evaluate, direct and monitor support each other and have their respective roles in one goal for the use of e-Learning within the scope of gover-

nance. this is clarified by the 4 phases that exist in the business processes in e-Learning to guide implementation. At the e-Learning business process stage consists of the dimensions of the Khan framework with sub-dimensions adopted based on conformity with the stages to be carried out to obtain maximum results, although there are similarities between dimensions and different stages, the contents of sub-dimensions at each stage are also different, according to the conditions at this stage with the support of additional sub-dimensions and references from previous studies. The stages of business processes in e-Learning are divided into 4 stages and are grouped in Table 3.1 and sub-dimensions are showed in Table 3.2.

Stage 1. Learning planning & curricula design, this stage consists of 7 dimensions that help evaluate e-Learning governance, including technological, pedagogical, resource support, interface design, institutional, management, evaluation. Each dimension has additional sub-dimensions that help complete the stages of the e-Learning business process.

Stage 2. Content development, this stage consists of 6 dimensions, namely technological, pedagogical, resource support, interface design, management, evaluation. Each dimension has additional sub-dimensions that help complete the stages of e-Learning business processes.

Stage 3. Learning delivery & learner coaching, this stage consists of 5 dimensions that help evaluate e-Learning governance, among others: technological, pedagogical, resource support, management, evaluation. Each of these dimensions also has additional sub-dimensions that help complete the stages of e-Learning business processes.

Stage 4. Assessment, evaluation, & credentialling, this stage consists of 3 dimensions that help evaluate e-Learning governance, including technological, pedagogical, management. Each dimension has additional sub-dimensions that help complete the stages of e-Learning business processes.

4 CONCLUSIONS

E-Learning governance is a system management that is crucial in creating an effective and efficient distance learning process in order to gain more knowledge. factors that can be known can support the readiness of the system to realize the performance of the best quality and quantity in improving governance in e-Learning systems. For maximum results, an evaluation process with a suitable framework with a comprehensive understanding of the needs and problems in improving the governance of the e-Learning sys-

tem is needed. the evaluation process with a framework that can understand the suitability of the needs and problems faced to improve governance in the e-Learning system can get maximum results. This paper is a preliminary study of the development of an existing framework component for e-Learning governance so that not all dimensions and domains adopted for the framework will be used for institutions, especially in tertiary Higher Education. An e-Learning governance framework evaluation tool is used for implementing improved governance in tertiary systems.. The components in the e-Learning governance framework consist of 3 domains for governance, 4 stages of business processes, and 21 dimensions that are spread out in each stage of the process and are clearly grouped in table 3.2.
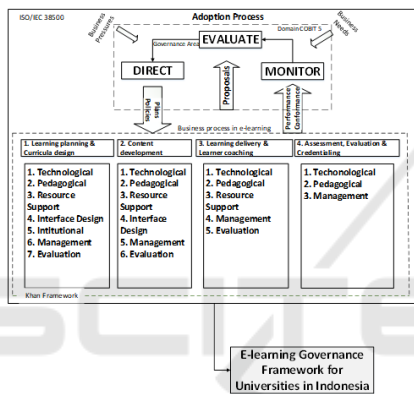

Figure 1: Adoption of E-Learning Governance Frameworks in Higher Education.

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