



## APPLICATION OF ICT FOR DISTANCE LEARNING IN COOPERATION PROGRAM OF STATE UNIVERSITY OF MAKASSAR

**Darlan Sidik**

Electronical Engineering Education, Faculty of Engineering, Universitas Negeri Makassar  
[darlansidik@yahoo.co.id](mailto:darlansidik@yahoo.co.id)

### ABSTRACT

*The cooperation program held by State University of Makassar using Information and Communication Technology for Distance Learning aims to advance mapping quality of learning results and learning process. The implementation of ICT for distance learning was based on several learning theories, namely cognitive, behavioristic, humanistic, constructivistic, and cybernetic. The main point of applying ICT for distance program lies on the message delivery design while teaching process occur. Application program is based on the theory, characteristics, and influence of blended learning. The applied ICT-ODL dimensions are: (1) same time-same place, (2) different time-same place, (3) same time-different place, (4) different time-different place. These dimensions affect the fulfillment of self-learning-based learning objectives.*

**Key words:** *ICT, distance learning, cooperative program*

### INTRODUCTION

The application of Information and Communication Technology in learning inevitably has brought huge impact to education. The implementation of ICT in education contributes to the acceleration of equal education in Indonesia despite the varied topology across the islands. The implementation of ICT in open and distance learning is based on the assumptions that: (1) open and distance learning is conducted on the path, level and unit of education, (2) open and distance learning helps people who cannot attend regular class (face to face meeting), (3) open and distance learning is carried out through varied forms and scopes which supported by learning facilities and services and assessment system that guarantees the quality of graduates at all levels of the educational unit in Indonesia.

State University of Makassar (UNM) realized the importance of ICT in extending and enhancing the quality of education

services. Thus, facilitates the implementation of ICT with 50 Mbps bandwidth and with Google-based services, it is upgraded to 30 GB for every students' account. UNM potentially able to encourage and develop the open and distance learning programs and take the offers from the local and international cooperation programs in enhancing students' acquisition ability in a sustainable manner.

Computer Mediated Communication (CMC) as the interaction tools using online system supported human communication that occurs through the use of two or more electronic devices and supported with particular softwares makes no boundaries (McQuail, 2005; Rice dan Gattiker, 2001). CMC facilitates both synchronous and asynchronous makes learning can be carried out anywhere and anytime with designed teaching kit based on students' needs and characteristics. Therefore, the design of message is crucial to be presented correctly in order to make the students understand.

Learning concept affects the implementation of teaching and has a key point to be emphasized such as learning achievement, learning materials, information system in learning process, but generally seeing whether (a) there is an improvement or new ability, (b) any changes or new abilities are not ephemeral, but settled and can be kept, (c) changes or new abilities occur due to the efforts made, (d) changes or new capabilities arise not only because of the growth factor (Badarudin, 2012). Therefore, it is necessary to select a relevant and appropriate design of learning message to be implemented in distance learning so that learning objectives can be achieved.

Conceptual references applied on the ICT for distance learning are learning theories such as: (1) *Behaviorism* believes that learning is a process of changing behavior which can be observed without noticing things in learners' mind by emphasizing more on result rather than the process of learning in achieving the objectives of learning, (2) *Cognitivism* believes that learning is organizing cognitive aspect and perspective to get the knowledge to obtain the objective of learning and the change of behavior is a complex thinking process which prioritizes the learning process. Those conceptual references are applied on the development of learning models such as: (a) learners are able to memorize and to use if the learning materials are organized based on certain pattern and logic, (b) the organization of the learning materials has to be from the simplest to the most complex, (c) concrete understanding is needed and memorizing is avoided, (d) individual differences have to be concerned, (3) *Humanism* believes that in learning, individual freedom on when and where to study or to learn is emphasized so that the learners tend to think inductively to acquire self-actualization. This reference

prioritizes more into the content of learning materials than its process. The application of this theory lays on humanizing humans and tends to be abstract, thus in the learning process, a guide to develop the learning model is really needed, (4) *Constructivism* emphasizes on the ability of the learners to construct new knowledge on their own through thinking process based on object, experience and environment, and their activeness is also one of the main points in determining the success of the learning process, such as: (a) learners are encouraged to do discussion regarding the learning materials, (b) learners are think an alternative, which means one problem does not always have one exact solution, but still have other solutions, (c) learners always use the latest information.

Since this reference emphasizes on the freedom aspect which is structured, thus various alternative tasks need to be provided using enough time based on the ability and involves concrete experience. Therefore, in the learning process, giving chance to learners to think appropriately by giving emphasize on the learning process, (5) *Cybernetism* emphasizes on the aspect of cognitive organization to process the information through senses' stimuli and to make reaction and respond. This reference is the learning materials presented and designed in the hierarchy and procedural to obtain the learning objectives. Therefore, this reference is set by determining learning objectives, steps on using the learning materials, reviewing information system in form of algorithmics and guiding the learners in accordance with information system occurred. Therefore, learning reference and the concept of learning model development reviewed are the combination between learning theories and learning designs which are integrated in len (Benny, 2011).

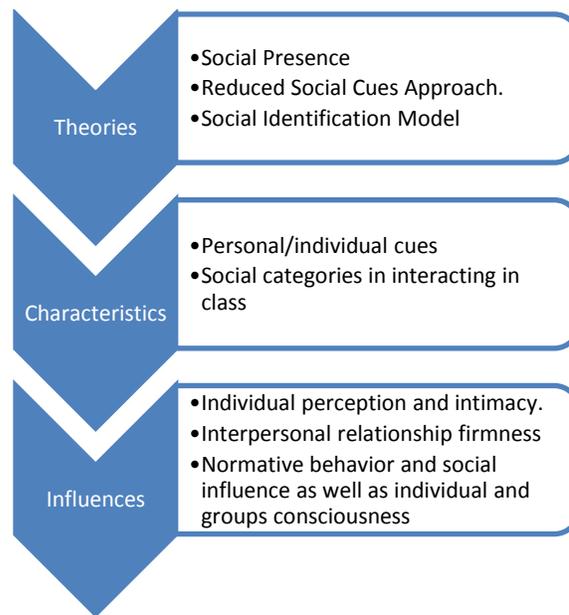
The implication of learning theories on the implementation of ICT on distance learning is that every learner has attention or respond toward the learning materials used in which those learning materials have to make it easy for them to achieve the learning objectives. The learning process concerns on the time and learners’ motivation and also the learning process which are suitable with the learning condition. This shows that, the implication of the learning theories on the distance learning using ICT is to make learning easier.

Model descriptions which become the basic model of the implementation are: (1) ADDIE with simple designing stage and have general learning design in which to give guidance in the process of arranging the learning materials for the learning needs in form of conventional class and online learning. The weakness of this model is that every component of the model does not need revision, while (2) Dick and Carey model has systematic stages which makes it right to be used for online learning due to its component can be revised. The model is a strategy to deliver online learning; especially it offers delivery strategy which is relevant to be used which is *Blended Learning*.

The use of delivery strategy in the distance learning with blended learning is a combination from various approaches and strategies in learning. Thus, blended learning is a delivery strategy which combines two or more learning strategies to achieve the learning objectives. The word blended learning in the learning can also be called as hybrid learning and mixed learning. This review believes that strategy of delivering learning materials with blended learning basis is a learning process which integrates between learning materials and learning program both through *online* and conventional class. Thus, the main

problem in this review is: how are the characteristics of the use of ICT for distance learning by cooperative program students of State University of Makassar.

The focus of the review of ICT for distance learning is related to the learning theory and CMC is based on the theories, characteristics, and influences as a result identified through learners’ perception on the communication online system with BL basis including personal relationship between teacher and educator and the environment in which the learning process occur. This influence also makes impacts on bigger social life (nation and country). To get a deeper understanding on the element of theories, characteristics and influences which become the basis of this review, we can see on the following Figure 1:



**Figure 1. Characteristics of Computer Mediated Communication**

Based on the figure described above, the relationship between theories with social presence is a characteristic of communication system online; this shows that there is closeness between verbal communications which wish for physical

presence. The influence on this aspect will make learners perception on the content of the communication (learning value); the closeness which can be built between individual and other groups so that interpersonal relationship among all users of online system can be made.

Social cues approach can create nonverbal communication, visual contact, which can make normative behavior which impacts are on the measured social relation. Therefore, understanding theories of the implementation of ICT for distance learning needs strong knowledge to know the existence and to understand the function of ICT. It causes persuasion which refers to the formation of social system to get learning commitment through various models of ICT for distance learning. Therefore, ICT for distance learning as various forms of technology implemented to process and send message which has been designed in the form of series of electronic systems with small power integrated in learning message so that it can be used for developing knowledge, skills, and attitude as well as behavior of the learners in interacting with environment and information as well as with their learning materials presented (Yaumi, 2015).

## DISCUSSION

The implementation of ICT for distance learning is seen as an activity which refers to theories and practices well planned and conducted through the following activities; designing, developing, utilizing, managing, and evaluating the process and learning sources used in the learning (Seels and Richey, 2014). The concerned theories include concept, principal, procedure which contributes on the deepness of the learning materials. Further, ICT which is integrated with computer present the message of the

learning materials which is in form of fact, concept, principal, and procedure to be further reviewed and interpreted as knowledge (Williams and Sawyer, 2007).

Information Technology is a tool or electronic mean whose message contains procedure. Thus, so that technology can be used precisely, topology of usage stages should be used procedurally; start from power, process, up to output. The concerned procedure cannot be done in opposite, if the reversion is occurred, thus the software and hardware which interact will fail. Software and hardware on the computer online system conduct their function in processing the data such as; sorting the data into *bit*, saving, manipulating, and presenting the data for then to be presented in information electronic room (Jardiknas, 2007). The integration of software and hardware which is implemented in learning gives effective and efficient result to achieve the learning objectives as essential hopes. This is a systematic use of computer to practice tasks in the learning either in synchronous or in asynchronous.

The advancement of ICT for distance learning brings big consequences in learning so that there are the displacements of learning in school. Those displacements are: (1) the learning process in class tends to omit learners habit, (2) the learning process in class is limited in term of its time, (3) the class can be proceed through virtual means which can be done anywhere and anytime, (4) paper-based consultation into online by using network (Rosenberg, 2001).

The displacement of ICT especially on learning influence the changing of methods, strategies as well as the approaches used in learning. To get a better understanding regarding the approaches used in learning, technology which is appropriate with learners' characteristics is needed (Smaldoni, et al., 2014). The displacement

of time and place can be seen during the interaction between teacher and learners using ICT; (1) same time-same place, (2) different time-same place, (3) same time-different place, (4) different time-different place. Meanwhile, the implementation of conventional learning can be done in the same place and same time. This displacement shows that interaction in learning can occur anytime and anywhere without the presence of the teacher as long as the learning message is well planned based on the characteristics and the conditions of the learners. The role of learning design is accommodating all learning design components to be the main consideration in determining the quality of the learning.

The displacement of the same time-different place and different time-different place make ICT as a strategy in presenting learning materials which is based on the learning design using computer because computer can connect formal classroom which presents teacher and learners in the different places, likewise the displacement of same time-different place using learning technology in form of video or voice communication. While the implementation of different time-different place using World Wide Web (WWW) as the learning sources which can widely connect and especially can be used in learning is e-learning and is able to fasten the equity of process quality and learning result.

To integrate all components of ICT for distance learning, various learning model has been created, such as: (1) Computer Based Training (CBT), (2) Computer Based Instruction (CBI), Integrated Learning System (ILS) and many others. The current model is more advanced so that it can create basic questions on the importance of *e-learning*. If then it becomes question, thus this discussion is more valuable to be review

in the context of learning on the displacement seen from ICT for distance learning.

The implementation of ICT for distance learning has not much integrated e-mail, digital camera and Web which optimize online software such as blended learning, Skype has not been designed specifically for learning in the curriculum which is constructed in cooperative program, but all learning materials or learning design used are only taken learning materials presented online. Therefore, to accelerate the equity of the quality of the learning result and process, the learning objectives is need to be set at first, then taking learning materials online as the learning sources. Thereby, the implementation of ICT for distance learning in State University of Makassar is an effort to accelerate the equity of the quality of learning result and learning process.

## **CONCLUSIONS AND SUGGESTIONS**

To accelerate the equity of the quality of learning result and learning process, the implementation of ICT for distance learning is a good choice. The right implementation based on the learning theories and learning designs especially learning materials design. The implementation of ICT for distance learning is a learning strategy which focuses on the learners who learn independently. ICT for distance learning based on *blended learning* is learning which gives easy way to learners because learning can be done anywhere and anytime. Therefore, ICT for distance learning concerns on the theories, characteristics and influences on every user of ICT. Therefore, the learning will be done on: (1) same time-same place, (2) different time-same place, (3) same time-different place, (4) different time-different place. The implementation of ICT for distance learning



can accelerate the equity of the quality of the learning result and learning process in Indonesia with islands topology, especially on the learners who are far away in a remote area.

## REFERENCES

- Badarudin. 2012. Hakikat Belajar dan Pembelajaran. [Online]. <http://ayahalyby.files.wordpress.com/2012/10/konsep-belajar-danpembelajaran-modul.pdf>
- Benny, P. 2011. *Model ASSURE Untuk Mendesain Pembelajaran Sukses*. Jakarta: Dian Rakyat.
- Jardiknas. 2007. *Gambaran Umum Sistem Informasi dan Teknologi*. Jakarta: Dikbud.
- McQuail, D. 2005. *Mcquail's Mass Communication Theory*. 5th ed. London: SAGE Publications.
- Rice, R.E. & Gattiker, U.E. 2001. New media and organizational structuring. In F.M. Jablin & L.L. Putnam (Eds),
- The new handbook of organizational communication (pp. 544-581). Thousand Oaks, CA: Sage.
- Rosenberg, M.D. 2001. *E-Learning Strategies for Delivering Knowledge in the Digital Age*. New York: McGraw Hill.
- Seels and Richey. 2014. *Instructional Technology* (Bloomington, in Assosiation for Educational Communications and Technology. P.1. Williems and Sawyer dalam Total Sarana Edukasi, 2007 (<http://www.total.or.id/info.php?kk=t ekno logi%20informasi>).
- Smaldino, Simanson Michael, Michael Albright. 2014. *Teaching and Learning at a Distance: Foundation of Distance Education Fith Edition*. USA: Publ. Allyn and Bacon.
- Yaumi, M. 2015. *Model Pengembangan Media dan Teknologi Pembelajaran: Suatu Pengantar*. Makassar: Alauddin University Press.