# Combination of Learning Contents and Technology

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*ABSTRACT*

*Along with development of the Internet, education is achieved on-line actively. Therefore, interest about computer aided learning is growing. By a lot of advantages such as expense and time-saving side, this type of learning is widening area gradually. In this paper we discuss some of the learning technology, such as e-learning, m-learning, and u-learning.*

***Keywords***: *E-Learning, M-Learning, U-Learning, Ubiquitous computing, LMS, LCMS, RFID.*

## 1. INTRODUCTION

E-learning refers to on-line network base education. Most of countries the e-learning has been developed by government in 1990. As a result e-learning is being used cyber university, and education business. By the advanced technology mobile communities, the mobile learning has been introduced late. In this paradigm, concept of mobile communication in emphasized. By this m-learning, Society of present is used with mobile technology. As a result it has developed from e-learning to m-learning. Recently, the concept of ubiquitous has been introduced to education. it is integration of ubiquitous and learning. As a result it makes a u-learning. Consequently it is possible at anywhere, at anytime in education. In the future, with ubiquitous, it will expect technology of u-learning. In this paper we describe developed learning environment. This paper consists of the follows. In chapter2, we explain definition of e-learning, current technology. We will discuss future of m-learning in chpter3. Then chapter4 will describe ubiquitous learning. Finally chapter 5 will conclude.

## 2. E-LEARNING

### 2.1 Definition

E-learning is defined as the design, construction and control of educational training through the internet or intranet [1]. The strongest point would be the opportunities possibilities to be received educations if Personal Computer and CD-ROM could be used without limited times. Recently, e-learning has been improved in both quantitatively and qualitatively. In the recent past, great number of e-learning platforms has been introduced into the market [2]. In Korea, the cyber university market grows larger every year.

### 2.2 Current Technology

A traditional learning is interactive whiteboards, and classroom response systems. But most of e-learning is serviced by web based education. Therefore it needs to learning technology. This chapter will introduce several popular methods online education. Multi learner activities can be conducted in Asynchronous and synchronous environments. Asynchronous learning refers to the asynchronous delivery of training materials or content using computer network technology [7]. Synchronous Learning is a training class where all participants are online at the same time and interacting [7]. In the early 1970's, Computer Based Training (CBT) and Computer Aided Instruction (CAI) became important applications of mainframe computers. The primary ideas behind CAI and CBT led to today's distance education in the early 1990's through the use of multimedia technology and the Internet [8]. In 1990, Learning Management System (LMS) was introduced and e-learning started being active through the web. LMS is Learning System that can make the environment helped studies on the web base. Since 2002, LMS (Learning Management System) and CMS (Content Management System), which can help to check and fix contents, were integrated and became the as LCMS (Learning Content Management System). The LCMS is dealt as XML and the same contents can be served through wireless Internet devices like printing publications, Internet and personal digital assistant (PDA) [3]. Also it can be reused.

## 3. M- LEARNING

### 3.1 Definition

M-learning is integration of mobile and learning. m-learning

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employs utilize mobile devices or wireless devices. Therefore m-learning provides people with the opportunity to access information where it would previously have been impossible, which means it is not limited to time and location. The devices that are used to access mobile networks are relatively inexpensive compared to desktop or laptop computers [10].

### 3.2 Technology

Together with web based education of e-learning, Mobile technologies fulfill the requirements to support life-long learning by being portable, individual to the context of learning and the learner's evolving skills and knowledge [5]. Also as computers and the Internet become more essential educational tools, the technologies become more affordable, effective and easy to use [9]. Today there are several technologies to made m-learning possible. With network technology base, Wide Area Networks (WAN) is big area including Internet or Network. Personal Area Networks (PAN) is mutual communication. Another important m-learning technology is mobile devices. Theses are some of wireless technologies that makes communication possible such as. Personal digital assistant (PDA) can function as a mobile phone. Most of m-learning software is a personal digital assistant (PDA) to access the learning contents [14]. Wireless Application Protocol (WAP) is protocol for Wireless communications. It makes possible communications services from a cellular phone.

## 4. U- LEARNING

### 4.1 Definition

U-learning is integration of ubiquitous and learning. u-learning refers to an environment where remote education and cyber experiences are available due to computers, networking and mobile communications technologies. In the u-learning environment, education is not confined to physical classrooms, but can take place at anytime, at anyplace.

### 4.2 Technology

With mobile devices, u-learning is integration Radio frequency identification (RFID), Digital Multimedia Broadcasting (DMB) technology, which is become free education to human. ubiquitous issues is RFID and DMB technology. u-learning means to use RFID to all things with mobile meaning. RFID is a system that can identify vehicles at long distances, high speeds and in demanding environments. For example, by collecting context-aware information from the sensors, analyzing and sharing the information through a sensor network, providing adaptive, situation-aware RFID services [11] [12]. Another example the most comprehensive application of RFID technology in libraries can be found in Singapore [13]. The concept of DMB was introduced to satisfy the consumer need for mobile multimedia broadcasting that provides quality audio and video services anytime anywhere. This Figure1 below is diagram of learning environments. It is ascending from e-learning to ubiquitous learning. Like this, the study that integrated ubiquitous and learning, is more upgrading than other learning, is expected to grow much more with e-learning.

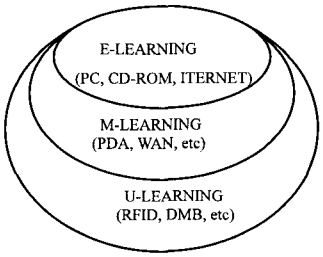


Fig.1. Diagram of learning environments [4]

### 4.3 Future

The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it [6]. In the future, people can learn something somehow and somewhere naturally as if it is the scene in the movie without recognizing the studies. That period is coming.

## 5. CONCLUSION

The paradigm of learning in 21st century has developed from e-learning to m-learning as a result of prevailing wireless technology. As discussed above, the combination of learning contents and technology has been developed rapidly. Developing u-learning without limited places and time imported the notions e-learning, which can help learning everywhere if people have PCs, m-learning, which can help learning with mobile as cellular phones and PDAs, and ubiquitous is the best gift to people those could not have educations prior to not having time in this society.

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