Introduction:

Researchers and practitioners have yet to agree on a common definition for e-learning. The term e-learning is frequently confused with other learning modes, such as distance learning, open learning, and open and distance learning (open and distance learning), although they are not interchangeable based on their meanings (Moore, Dickson-Deane, & Gaylen, 2011). E-learning literally refers to the learning activities based on an electronic delivery means, whereas distance learning refers to an instructional delivery mode in which an instructor is physically located in a different place from the learner as well as possibly providing the instruction at disparate times (Moore, Dickson-Deane, & Gaylen, 2011, p. 129). Open learning means “either that distance education is the prevailing method used by the teaching system or that there are no prerequisites for access, even for degree programs.”

E-learning, in a narrow sense, is defined as strictly being accessible using technological tools that are computer-based, web-based, web-distributed, or web-capable (Nichols, 2003) and considered part of open and distance learning. However, e-learning, in a broad sense, not only covers content and instructional methods delivered via CD-ROM, the Internet, or an intranet (Benson et al., 2002; Clark, 2002) but also includes audio- and videotape, satellite broadcasts, interactive TV, and mobile devices. In this sense, it is used as a synonym of open and distance learning that diverges from distance learning (van Zyl, Els, & Blignaut, 2013). In our study, e-learning refers to a type of learning that is synonymous with open and distance learning.

E-learning stands for a form of electronically designed, distributed, and facilitated learning activities. It includes instruction delivered via all electronic media, such as the Internet, intranet, satellite broadcasts, audio/video tape, interactive TV, and CD-ROM (Govindasamy, 2002). E-learning can be conceptualized in five dimensions: a new tool that incorporates equipment, hardware, and software; a facilitator of interaction; learning; a reduction in distance; and a collaborative enterprise (Stein et al., 2011). Unlike traditional in-class learning, e-learning is most likely to reference out-of-classroom educational experiences, although in-class educational activities experienced via information and communications technology (ICT) can sometimes be described as a form of e-learning. In addition, e-learning includes blended learning known as a mixed type of learning via the online and offline
learning environments. This unique device of learning has been recognized as an intervention that can facilitate organizational learning (Phang et al., 2008) and individual empowerment (Gandhi, 2011) in the public sector.

E-learning offers unprecedented opportunities for learners. Its primary advantage is that it enables students to participate in learning activities from anywhere in the world and at any time provided a computer and internet connection are available. Nowadays, devices such as smart-phones or smart-pads provide even mobile learning opportunities. Many countries have developed national e-learning policies and e-learning infrastructure designed to give direction and lead the way (Anderson et al., 2006; Brown et al., 2007; Stein et al., 2011). In Korea, the Central Officials Training Institute (COTI) opened the Cyber-Education Center in 2009 to provide virtual classes for government employees. Since e-learning is quite flexible in terms of space and time, government employees can even take on-the-job training without leaving their offices. Each year, thousands of government employees enroll in e-learning courses via the Cyber-Education Center.

In the government sector, the trained incapacity is recognized as a long-standing problem. Government employees work in a bureaucratic environment and are accustomed to following their supervisors’ directions or prepared manuals; therefore, they tend to gradually lose their creative thinking abilities (Adler, 2012; Turner, 1976). Government employees in Korea are usually recognized as well-qualified individuals before they start working for the government because they have to pass a highly competitive exam. However, they subsequently appear incapable of doing anything much with their academic backgrounds and potential, which might lower the feeling of achievement associated with their work and the level of citizen satisfaction.

Empowerment in an organization corresponds to employees’ ability to recognize their timidity, create autonomy through boundaries, and build teams for problem resolutions (Terblanche, 2003). A variety of pedagogical designs, content types, and lecture types for optimizing e-learning have been developed and are available. Based on these devices, e-learning can offer vivid and authentic learning materials using multimedia technology.
However, these e-learning devices have rarely been examined to determine how effectively they can contribute to the improvement of knowledge transfer, knowledge enrichment, and empowerment. Although e-learning has been implemented in the educational and training field for government employees, so far little evaluation on its effectiveness has been conducted. Our study explores the influence of e-learning on individual and collective empowerment by using data collected from e-learning class participants of Central Officials Training Institute Cyber-Education Center.

**Characteristics**

E-learning, in terms of being synonymous with open and distance learning, is understood from many perspectives and used with different meanings (Stein et al., 2011). Its applications and processes include computer-based learning, web-based learning, virtual education opportunities, and digital collaboration. Content is delivered via the Internet, intranet/ extranet, audio or video tape, satellite TV, CD-ROM, or mobile devices. It can be self-paced or instructor-led and includes media in the form of text, images, animations, and streamed video and audio.

Four general categories can be identified in e-learning:

1) technology-driven,

2) delivery system-oriented,

3) communication-oriented

4) educational paradigm-oriented (Sangrà et al., 2012).

From the perspective of the technology-driven category, e-learning is the use of information and communication technology (ICT) for learning. It is an information and communication technology (ICT) based learning setting of taking a course online using a modem, wireless, or cable connection to access course material from a computer, phone, or handheld device. From the perspective of the delivery system-oriented category, e-learning is the delivery of a learning, training, or education program by electronic instruments (Li et al., 2009). The communication-oriented category considers e-learning to be a communication, interaction, and collaboration tool in information and communication technology (ICT) based environment. Finally, the educational paradigm-oriented category considers e-learning as a new way of learning or as an improvement of an existing educational paradigm by using
information and communication technology (ICT) (Sangrà et al., 2012). E-learning is oriented toward the construction of a user-friendly learning setting by using information and communication technology (ICT). Through e-learning, students can access e-learning content wherever and whenever they like. They can also repeat the entire learning process as the courses are recorded and stored, and repeated access to content is usually allowed (Im & Bautista, 2009). All four categories have to focus on the achievement of learning excellence.

**Modalities of e-learning activity**

Modalities of e-learning activity refer to the types of e-learners’ activities. In a broad sense, they can be divided into two categories: individualized self-paced e-learning and group-based e-learning. Individualized self-paced e-learning refers to the situation where a learner is, by himself or herself, accessing learning resources such as a database and course content. This category can be further divided into open and closed individualized self-paced e-learning. The former involves accessing learning resources via an intranet or the Internet, whereas a learner in the latter type uses learning resources such as a database or a computer-assisted package offline while not connected to an intranet or the Internet.

Group-based e-learning refers to the situation where groups of learners are working together in information and communication technology (ICT) based setting. This category can also be further divided into two types: synchronous and asynchronous group-based e-learning. Learners in the former type are usually working together in real time via an intranet or the Internet whereas those in the latter type are working over an intranet or the Internet and exchanges among participants occur with a time delay. A critical difference exists between individualized self-paced e-learning and group-based e-learning: Interactions in e-learning are very limited in the former regardless of being online or offline, but widely open in the latter regardless of being synchronous or asynchronous. Collaboration is usually realized through tasks and discussions. The depth of collaboration is perceived to vary, depending on assignment type and learner motivation (Leppisaari et al., 2013).

E-learning activities are closely related to content delivery style. Lectures in the e-learning setting can be delivered in a very interactive way. Lecture types in the e-learning setting can actually be more diversified than those in traditional offline classes. To promote visual attention, both static and moving images can be presented at the same time. Educational
games can also be utilized in an interactive way. A learner physically and/or mentally has a role in creating an outcome in games. His decision, in return, results in a reward or consequence. In such ways, e-learning can provide more diversified lecture types for learners so that learning excellence can be effectively achieved.

**Empowerment**

Empowerment is conceived as a multidimensional social learning process that helps people gain control over their lives (Page & Czuba, 1999). Empowerment is operative at various levels—namely, individual, interpersonal, organizational, community, and collective (Hur, 2006). Boehm and Staples (2004) emphasized personal and collective dimensions whereas Dodd and Gutierrez (1990), Lee (1994), and Gutierrez (1990) examined personal, interpersonal, and institutional or political dimensions. However, the interpersonal dimension can be included in the collective dimension because the term interpersonal has a connotation of collectiveness. The institutional or political dimensions can be represented as part of the collective dimension. Therefore, empowerment can be examined in the context of both individual and collective aspects (Hur, 2006).

**Individual empowerment and its dimensions**

Individual empowerment relates to the way in which people think about themselves as well as the knowledge, capacities, skills, and mastery they actually possess (Staples, 1990, p. 32). Various authors have presented the dimensions of individual empowerment in their own way, but the components might be expressed along with the array of Thomas and Velthouse (1999) and Spreitzer et al. (1997). Four dimensions can be extracted from the review of various literature—namely, a sense of meaning, competence, self-determination, and impact (Hur, 2006).

A sense of meaning refers to the notions of consciousness rising (Moreau, 1990) and critical consciousness (Lee, 1994). In a conceptual view, a sense of meaning can become a greenhouse in which the concept of competence is generated (Thomas & Velthouse, 1990). Competence refers to an individual’s ability to perform a job properly. Self-determination is considered to be one of the most critical factors in the components of individual
empowerment. It refers to a state of understanding in terms of what to do in a crisis situation or in the resolution of particular problems. The notion of impact falls between individual empowerment and collective empowerment because impact is outcome-oriented toward organizations and society as a whole.

**Collective empowerment and its dimensions**

Collective empowerment refers to a process by which individuals join together, help one another, learn together, and develop skills for collective action (Boehm & Staples, 2004; Fetterson, 2002). Individual empowerment sometimes conflicts with the development of collective empowerment, when empowerment is not effectively operating. Although individuals can become more empowered personally through the process of personal development, they cannot always be effective in helping to build their group’s collective empowerment. Personal empowerment should be consistent with collective empowerment to improve the value of social and economic justice more effectively (Staples, 1999).

Collective empowerment develops when people join in action together to resolve particular social problems and achieve social change. Groups become empowered through collective action (Staples, 1990; Hur, 2006) in a collaborative way. In carefully reviewing the conceptual interrelations between the dimensions of collective empowerment, four components can be extracted: collective belonging, working together for collective goals, gaining forces to achieve shared goals, and community building among group members (Hur, 2006).

**Relationship between E-Learning and Empowerment**

The objectives of learning, regardless of its type (e.g., traditional in-class learning or e-learning online) go beyond knowledge transfer. As described in the concept of heutagogy, empowerment should be considered as just one of these objectives. School-based learning might focus on knowledge transfer, knowledge enrichment, and knowledge enhancement. However, the objectives of e-learning have to be expanded beyond those of traditional school-based learning. E-learning can not only concentrate on the three previously mentioned traditional objectives, but also has to focus on knowledge synthesis and empowerment. Therefore, the final objective of e-learning has to be oriented toward individual and collective empowerment.
E-learning emerged in the field of education approximately 20 years ago. Since then, a variety of pedagogical designs for optimizing e-learning have been developed. These designs include scenario-based learning, goal-based learning, problem-based learning, and case-based learning. A variety of e-learning content types have been developed, including text, audio, visuals, games, and blended types. E-learning has also been utilized in the workplace as its benefits have been identifiable from the workplace point of view (Batakka-Busquests & Oacheco-Bernal, 2013; Berge & Giles, 2006).

E-learning has been recognized as an appropriate educational mechanism for excluded individuals and communities having few, if any, degrees of freedom to engage with open learning to help reduce or remove these disempowering conditions (Lane, 2009). Some authors (Palloff & Pratt, 1999) have argued that students in an online learning environment learn what it takes to pace themselves in order to get the job done. In this process, they become increasingly confident in their abilities and feel empowered to work in a manner that best suits them. However, e-learning has rarely been practiced for individual and collective empowerment in the real world except for the Sunhara Walmart project in India (Jimenez, 2012), an agricultural development and empowerment initiative that works with 2,500 women farmers in Ghaziabad and Agra on overall socioeconomic empowerment. The project was established by Agribusiness Systems International with funding from the Walmart Foundation and has implemented e-learning centers to counter the constraints that women face, such as illiteracy, transportation difficulties, and low market prices.

In addition, empirical studies to test the relationship between e-learning and empowerment have rarely been conducted, and only a couple of studies have been published in journals. One was about empowering disabled people through e-learning. The paper was not written based on empirical data, but rather to address the challenges to helping people with intellectual disabilities easily learn the activities of daily living (Barrera et al., 2008). The other paper was a review study on e-learning for the empowerment of teaching and learning in higher education. It described the basic ideas of e-learning, modalities of e-learning, media influences in the e-learning process, and various pedagogical designs of e-learning (Gandhi, 2011).
Different Tools Used For E-learning

Despite a shakeout in the market in the past few years, many authoring tools are available that will help you create effective WBT. These range from general-purpose tools designed for presentations and web-authoring to dedicated e-learning applications. The tools cover a broad range in terms of price, sophistication, and how easy they are to learn.

Macromedia Dreamweaver

Dreamweaver is an excellent starter tool for WBT and general web-page authoring. Essentially, Dreamweaver automates the authoring of web content by generating HTML and JavaScript code through a WYSIWYG interface. Among its many capabilities, Dreamweaver makes it easy to create animations and show/hide layers for WBT pages. If you have Dreamweaver, you can download free extensions for e-learning. Once installed, these added modules become available through the Dreamweaver interface. They allow you to create quizzes, including drag-and-drop exercises, and also to track learner results and output them to standards-compliant learning management systems (LMS). Dreamweaver is fairly quick to learn and develop on. However, it is not as powerful for WBT as many other tools. It's capabilities are limited to what can be supported through the of native HTML and JavaScript functionality of web browsers.

Macromedia Flash

Though it was initially designed for creating small and fast-loading web animations, Flash has evolved into an industrial-strength tool for web applications. More and more, it is becoming a development tool of choice for WBT. With Flash, you can do everything you can do in Dreamweaver plus much more. While Dreamweaver's output is limited to what a native web browser can support, Flash's output is practically unlimited. This is because Flash creates its own application file (SWF file) that runs inside the browser window but does not depend on the browser's native capabilities.
Flash is excellent for creating animations, exercises, and simulations of all kinds. It supports rich media, including audio and video. Added to this, its modest price makes it a very attractive tool for even low-budget WBT projects. The only drawback of Flash as opposed to some other tools is its complexity. The learning curve can be steep. And, while many effects can be attained through the user interface, you need to write code to unleash Flash's full power. Flash's ActionScript language is very similar to JavaScript.

**Other Tools**

Depending on your project and budget, here are some other tools you might want to investigate:

- Demo Shield by Install Shield Corporation
- RoboDemo by e-Help
- Microsoft PowerPoint
- Macromedia Director
- Macromedia Author Ware
- Macromedia Breeze