A Study on the Development of Conceptual Framework for Open Learning Platform to Improve Online Higher Educational Learning Environment

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Abstract: This study aims to develop a conceptual framework of open learning platforms, containing essential concepts to improve the online learning environment for higher education. The grounded theory was used. The researcher viewed improvements in the online learning environment for higher education as one education phenomenon that should be continually informed to all the members involved in the education paradigm that has arisen due to technological development. The conceptual framework of the open learning platform for higher education was perceived as a substantive theory that has improved and explained the online learning environment for higher education.

INTRODUCTION

Purpose

The Open Learning Platform for Higher Education Online Learning Environment is the MOOC (Massive Open Online Courses) formed by the development of the OCW (Open Course Ware), which enables students to learn the online lectures at the university. MOOC is the massive open online course aimed at anyone who needs real university lectures (Yang, 2016). MOOC has been studied in various respects as a suitable online learning platform for higher education learners (Bae & Jun, 2014; Barak, Watted & Haick, 2016; Choi, 2014; Fasihunddin, Skinner & Athauda, 2014; Kang, 2015; Kim, 2016; Milligan, Littlejohn, 2014; Park, Kim & So, 2016; Park, Lee & Kuk, 2015).

To sum up, first, MOOC currently expressed as an open learning platform, presents an online learning environment for higher education online learners and provides an automated feedback environment that does not give the learner a sense of interactivity (Bae & Jun, 2014). Second, instructor-learner's interactive environment and direct participation are necessary (Kang, 2015). Third, collaboration with various experts is needed to communicate with learners (Choi, 2014). Fourth, learner-centered and personalized content based on individual needs and preferences should be provided (Fasihunddin, Skinner & Athauda, 2014). Fifth, MOOC does not provide an opportunity to reflect on learning (Milligan, Littlejohn, 2014). It

needs social interaction for learners (Watted & Haick, 2016). Sixth, simplification of the operation model and its establishment of a stuck system are concerned (Park, Lee & Kuk, 2015). As mentioned above, it can be summarized as having various limitations in MOOC.

Content is open and learners are social by doing away with traditional learning methods (Benneaser et al., 2013). The online learning environment requires a creative online learning model through a paradigm shift in a given situation, rather than focusing on better technology integration than before (Park, Lee & Kuk, 2015).

Kang, Lee & Han (2013) stated that it is necessary to study the system implemented in the form of a platform that can bring up the level of education contents by bringing up learner-centered design and participation. The higher education online learning occurs in the complex and dynamic interaction of various elements such as learners, learning activities, and technology as well as learning contents, instructors, learning support, institutions, and culture, so an in-depth analysis of the relationship is needed (Park & Rah, 2016).

Especially since the contents of lectures for higher education have been delivered through the platform, platform development and operation strategies are very important, so platform concept and development strategy are essential (Jang, 2016). Since online content for higher education will be delivered in the form of a platform in the online learning environment, development and operation strategies for the online learning platform for the higher education learner

should be presented in the form of platform after designing of the conceptual framework.

As the importance of online learning in higher education is emphasized, research on the possibility of utilizing online learning in higher education (Axinte, Petrica & Barbu, 2017; Dennis, 2012; Hyundai research institute, 2014; Kang, Kim & Kim 2016; Oh & Chun, 2016; Schuwer, et al., 2015), the relationship and influence between components in online learning environment (Blayone, et al., 2017; Kang, Lee & Han, 2013; Kim & Lee, 2014; Lee, Jeon & Nah, 2013; Robinson & Carroll, 2017; Sim, 2017), and the direction of future development of high school online learning (Ballarano, et al., 2016; Fischer, 2014; Jeon, Jang & Choi, 2015; Lee, 2012; Song, Lee & Park, 2016) are being actively conducted in Korea and abroad.

In the past 30 years, the educational paradigm has been changed in various changes in the school scene. Along with the development of rapidly changing technology, social change causes perceptual change in the education sector (Ahn, 2012). In the continuing education paradigm, in particular, higher education online learning is achieved through complex and dynamic interactions of various factors such as teachers, learners, technology, support, institutions, and culture. It is necessary to analyze the relationship between each element and the attributes (Wang, Han & Yang, 2015).

There have been continuous studies and efforts to improve the online learning environment in the changing education paradigm that has arisen due to technological development (Ahn, 2012; Ahn, 2017; Avsec, Rihtarsic & Kocijancic, 2014; Kwon, 2014; Seol, 2016;). Consequently, it is necessary to continuously develop and change open learning platforms for higher education learners (Cho et al., 2015), and to consider what factors and concepts to use and apply when designing an open learning platform (Fasihuddin, Skinner & Athauda, 2014; Jang, 2016; Park, Kim & So, 2016).

This study aims to develop a conceptual framework of open learning platforms, containing essential concepts to improve the online learning environment for higher education. The grounded theory research method of Strauss & Corbin (1998) was used. The grounded theory is practical for the purpose of developing the reality theory through the systematic abstraction process, and it is able to reflect strongly the given contextual situation of the reality and give practical help related to the phenomenon (Kim, 2014).

The researcher viewed improvements in the online learning environment for higher education as one education phenomenon that should be continually informed to all the members involved in the education paradigm that has arisen due to technological development. The conceptual framework of the open learning platform for higher education was perceived as a substantive theory that has improved and explained the online learning environment for higher education.

Research questions

The purpose of this study is to develop a conceptual framework of open learning platform to discover and improve the situation and implications of the online learning environment of higher education through multivariate analysis. The research questions are as follows.

Question 1. Why need a conceptual framework for the open learning platform to improve the online higher educational learning environment?

Question 2. How is the conceptual framework of the open learning platform designed to improve the online higher educational learning environment?

Question 3. How can the conceptual framework of the open learning platform be developed to improve the online higher educational learning environment?

THEORITICAL BACKGROUND

Open learning platform

Concepts and component of platform

The term platform has been used in everyday life, art, and business since its creation in the sixteenth century, and today it is being expanded into a universal concept applicable to various fields (Noh, 2014). The platform serves as a hub for transportation and passengers. The platform is also the center of traffic and logistics. There is a myriad of value exchanges within it. This is the platform (Yoon, 2012).

Again, the platform evolves through the connections and interactions of platform participants into an environment in which multiple groups, such as suppliers and consumers, participate to exchange the value each group gains through a square deal. The platform can be said to be a mutually beneficial ecosystem that can provide new values and benefits to all. (Cho, 2011; Choi, 2012; Noh, 2014).

Common components of the platform

Platforms have different shapes depending on the field, but there are common components. The first is the physical hardware that delivers value, the second is the content that is the software that moves the hardware, and the third is the interface that enables access to the hardware and software solutions (Kim, Song & Im, 2015).

Platform participants.

The platform participant is an entity that constitutes an ecosystem surrounding the platform other than a user (Kim, Song & Im, 2015).

Participants in the educational platform

The educational platform can also be described as an ecosystem, depending on the tendency to view the platform as an ecosystem. Participants in the educational platform include learners, teachers, parents, companies, and telecommunications companies. These participants interact with each other by consuming or providing their desired educational services and learning contents through the platform (Korea Education & Research Information Service, 2011).

Open learning platform

Open learning has been recognized as having a positive impact on the modern education system. Based on the open learning, MIT's OCW (Open Course Ware), and MOOC such as Coursera (www.coursera.org) or edX (www.edx.org) have been given many opportunities for higher education (Abelson, 2008; Huang & Wu, 2017; Huijser, Bedford & Bull, 2008). In addition, the development of the open learning network has enabled the Social Media Platform, OER (Open Educational Resources), and MOOC (Farrow et al., 2015; Weller, 2014; Wiley, 2014).

The recent issues of MOOC

In the United States, Coursera, edX, and Udacity have been established and are now on the MOOC platform for the fifth year in 2017. MOOC is a free online course for leading universities, MIT, Harvard, and Stanford, and a massive lecture involving tens of thousands of learners in a lecture. In particular, it has been controversial through many predictions and researches on the effect of innovation to the higher education system existed (Lee, 2017). Therefore, research topics such as the influence of MOOC on higher education, the challenges, opportunities and possibilities that MOOC will have in higher education are the topics that are constantly found in academic search since the advent of MOOC (Dennis, 2012; Mazoue, 2014; Schuwer et al., 2015; Yuan & Powell, 2013).

Some argue that MOOC's destructive innovation will make a few campus-based universities disappear, and that current MOOC trends will eventually disappear when the early bubble turns off, or that they will remain in the role of supplementing and improving existing college education (Fischer, 2014; Sharrock, 2015).

MOOC is expanding globally and is undergoing constant change in quality. MOOC's new educational form spreads to all over the world. In the beginning, it started with the intention to open to all of the world free of charge, but now it is necessary to analyze the demographic data and learning motivation of the learners who are taking the course, and it is making direction (Lee, 2017). There is skepticism about the problems and limitations of MOOC. MOOC has been challenged in terms of pedagogy, sustainability, quality of education, and assessment and credit recognition. When MOOC is launched, it is expected to have the destructive power to replace the previous higher education system, but it could not reach a college lecture (Hyundai research institute, 2014).

In addition, it is argued that campus-based universities will never disappear because it provides the direct learning experience that MOOC can't offer to (Fischer, 2016).

In this context, there are also views that the MOOC platform plays a role as a library or a digital teaching material and the MOOC platform is used as a blended method in face-to-face classes or as a learning material (Chung, 2016; Middlehurst, 2016).

A precedent study: Open learning platform in higher education

Educational value utilizing platform

The change of modern society and the technological development of IT sector are changing more rapidly with the emergence of online learning due to the new change of education method in the course of changing into knowledge information society. The online learning method has changed not only to the interaction between the learner and the learning contents but also to the learning content management platform provided to the learner, so that the learner can be constructed and operated with focusing on the learner. Therefore, it is necessary to study, design and manufacture platform considering learner-oriented online learning characteristics that can enhance learner interaction (Song & Oh, 2004).

Concept and importance of open learning platform

The open learning platform can be interpreted in various ways such as cyber learning, e-learning, and internet lecture, but a common feature can be defined as a system that provides the learner with the overall data and medium necessary for education through the Internet (Digolo, Andang'o & Katuli, 2011).

In recent years, there has been a tendency to include special programs and community functions that enhance the learning effect beyond the level of providing online materials for learning. According to this tendency, open learning platform is appearing in various types such as online public education system and MOOC, and various types of learners who use open learning platform vary according to the national statistical offices (Im et al., 2014). Through the conceptual definition, characteristics, diversification and importance of the open learning platform, learners who learn from the contents provided in the open learning platform will be able to connect with and interact with all kinds of learning contents, It can be repeatedly evolving into an alternative educational ecosystem, and on the basis of this evolution, learners

within the platform can be expected to be given new values and benefits.

The conceptual framework of open learning platform

The need for the development of a conceptual framework of the open learning platform to improve online higher educational learning environments can be identified through research and definitions of the attributes and characteristics of conceptual frameworks. The conceptual framework can provide a guideline to organize and organize the phenomena as a superstructure of theory or model and can play a role as a hypothesis when developing theories and models (Song & Park, 2002).

The conceptual framework does not just mean a collection of concepts but can act as a structure that can handle essential functions as part of the overall concept. The conceptual framework that connects concepts as a network or as a dimension can provide a comprehensive understanding of a phenomenon. The conceptual framework not only presents the analytical environment, but also enables the hermeneutical approach to social reality, enabling understanding of phenomena beyond theoretical explanations. The conceptual framework can be developed through the process of qualitative analysis and has the characteristics that can be structured.

In addition, the importance of the conceptual framework is that the basis of the research data is based on the theory of many disciplines, which are empirical evidence through the analysis of conceptual frameworks (Jabareen, 2009). Miles & Huberman (1994) looked at the conceptual framework by presenting the key elements, constructs, or variables well organized and presenting the relationship between them as real.

Strauss (1987), who advocates grounded theory research methodology, said that the development of conceptual frameworks is based on grounded theory because of the main characteristics of conceptual frameworks. This is because grounded theory research methods involve a number of distinct features that ensure conceptual development and are a clear paradigm for exploration involving coding paradigms. Therefore, this study to develop and design the conceptual framework development of high school open learning platform through grounded theory research method can confirm suitability for research methodology. Based on the properties and characteristics of the conceptual framework, the necessity of developing the conceptual framework of the open learning platform can be summarized in total of five.

First, the conceptual framework organizes the requirements and phenomena to improve the online learning environment. It can serve as a guideline. Second, the role of the preliminary hypothesis will be possible when the actual open learning platform is designed. Third, each concept covered in the conceptual framework of the open learning platform is part of the overall open learning platform. It is possible to play a role as a structure. Fourth, the development of conceptual framework of open learning platform can provide a comprehensive understanding of the phenomenon in higher learning online learning environment. Fifth, the key elements, constituents, and variables of the open learning platform can be summarized and presented in a good way, so that the relationship between the constituent concepts can be assumed to be real.

Therefore, the conceptual framework of the Open Learning Platform for Higher Education can be seen as an essential step that enables the environment to start thinking and starting with a fundamental idea of how to develop and design Open Learning Platform for Higher Education.

RESEARCH METHOD

The phenomenon of online higher educational learning environment focused on in this study responds more sensitively to the changes of the age and the tendency that the variables expressed in the change of education paradigm due to technological development becoming more diversified with the passage of time. Therefore, this study selected the grounded theory study method as research method. The grounded theory is aimed at the development of the theory through systematic abstraction process. The theory is substantial, it strongly reflects the given contextual situation of reality, and it can give practical help related to the phenomenon (Kim, 2014).

The researcher who looked at the conceptual framework development of the open learning platform as substantive theory to improve the phenomenon of online higher educational learning environment proceeded with the three-step coding in the grounded theory research method to develop the conceptual framework. The purpose of this study is to present the conceptual framework of open learning platform to improve the online learning environment of higher education as a theoretical and conceptual framework form.

Literature review

The overall content of the online learning and open learning platforms was examined to analyze various aspects of these platforms for higher education. The grounded theory was applied to conduct open coding, axial coding, and selective coding. Thus, the conceptual framework for the design principle of open learning platforms was derived and developed. The literature examined in this study was used to verify, confirm, and compare the categories derived from open coding. The concepts that frequently appeared in

the literature were used in the preparation of interview questionnaires.

Interview

For the interview, a purposeful sampling method was used to select a total of ten participants. Of these, four were professors with online learning experience of 10-25 years and six were online platform developers and experts with work experience of 10-25 years. The interviews were conducted in an unstructured or semi-structured manner.

RESEARCH ANALYSIS

Deriving components improving online higher educational learning environment

Open coding

By open coding the interview, 109 concepts, 43 subcategories, and 18 categories were derived. The open coding identified the problems and implications of the online learning environment for higher education in the educational paradigm that has arisen due to technological development. It also derived the factors of the open learning platform that should be considered to improve the online learning environment for higher education. Thus, the need for the conceptual framework of the open learning platform was summarized.

Conceptual framework design of open learning platform for higher education

Axial coding

In the axial coding stage, a paradigm model consisting of causal conditions, contextual conditions, intervening conditions, phenomena, action/interaction strategies, and consequences was used to recombine data in a new way. The categories classified by the paradigm, based on the paradigm model through axial coding, were used as the conceptual framework for the design principle of the open learning platform. Axial coding uses a paradigm model to recombine data in a new way. Developing conceptual framework of open learning platform for higher education

Selective coding

Finally, in the selective coding, a core category was derived based on a paradigm model that connected the relationships through axial coding. The core categories of this study included the following: 'a continuously changeable open learning platform that creates the changes desired by all the members of an online learning environment for higher education' and 'an open learning platform equipped with simplicity, usability, sustainability, accessibility,

communication, openness, and innovativeness to realize student-centered engagement and presence.'

CONCLUSION

This study developed and presented a conceptual framework for open learning platforms through open coding, axial coding, and selective coding. It also proposed three directions for its practical implementation. First, the approach to the development of an open learning platform for improving the online learning environment for higher education should start from viewing it as a phenomenon that the field of higher education is facing. Second, all members of a universities' online learning platform, including professors, learners, developers, operators, and planners, should understand the foundation for the online learning environment that they want to implement. Third, it is necessary to contemplate and investigate the kind of education that should be realized in the online learning environment for higher education. It is hoped that this study will lead to a meaningful shift in thinking among the field specialists researching the development of open learning platforms to improve the online learning environment for higher education. Hence this study can serve as a useful foundation to approach novel challenges and further research efforts in this field.

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