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# Open knowledge management in university education in the context of digital transformation

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**Abstract**--Research objectives: this study aims to clarify the role of knowledge in social development, and open knowledge management in higher education. Research Methods: The authors mainly use theoretical research methods. Research through documents: retrospective, summarizing, systematizing theories from domestic and foreign studies, selected documents closely related to the task of knowledge research, knowledge management, thereby, act as a scientific basis for further studies to propose appropriate measures for higher education in Vietnam in the digital transformation period in education. Research results: the study shows the role of knowledge in the process of social development. In addition, the study points out the importance of open knowledge management to the training process in universities.

**Keywords**--Knowledge, open knowledge management, training management.

## **Introduction**

In the current globalization trend, the interaction of different cultures - education is having a great meaning. As a rapid developing country, Vietnam inevitably absorbs modern educational achievements in the world, promoting the development of Vietnamese education. Digital content and online information play an important role in the development of modern economies and societies. These types of resources are increasing the interest to citizens and various related parties in the lifecycle of digital information assets. This vibrant digital era has created enormous business opportunities as well as the wide dissemination of knowledge in this time of economic crisis. This creates great opportunities for the development and scientific improvement of all countries.

One of the most effective and important ways to share knowledge is the open access philosophy, because knowledge is absolutely indispensable for social development in a globalized world. Following the UNESCO principles, one of today main goals is to build a modern knowledge society in which all people must have access to information and knowledge.

In this context, the internet plays a clear and important role as it has fundamentally changed the practical economic and the practice of distributing scientific knowledge. This creates new challenges for educational institutions and also for researchers and educators. The Berlin Declaration on Access to Open Knowledge in the Sciences and Humanities (2003) encouraged open knowledge models. Nowadays, about 300 organizations (governments, universities, research institutions, funding agencies, foundations, libraries, museums, archive agencies, academic societies and professional associations) have signed this Declaration. There are many clear examples of the real impact of the Open Knowledge model in higher education institutions, especially in universities: MIT's Open Course Ware, Open Educational Resources Commons, Cape Town Open Education Statement on "unfolding the promise of open educational resources" and Guidelines for the distribution of research results through open repositories.

This particular issue is based on the idea that open knowledge in higher education is a broader field than the open approach. Open knowledge includes: open software, open content, open science and open innovation.

In Vietnam, the management of open knowledge in higher education is currently having many inadequacies, from the idea for open innovation to the infrastructure for innovation has not been implemented synchronously throughout...

Therefore, the study on Open Knowledge Management in higher education helps to answer questions about how higher education institutions deal with or should deal with open knowledge approaches. Researchs that are practical in developing education, capturing scientific and technological achievements, aiming to develop quality human resources in the future.

## **Research Method**

In this study, the authors mainly use theoretical research methods. Research through documents: retrospective, summarizing, systematizing theories from domestic and foreign studies, selected documents closely related to the task of

knowledge research, knowledge management, thereby, act as a scientific basis for further studies to propose appropriate measures for higher education in Vietnam in the digital transformation period in education.

**Theory on open knowledge management**  
***The role of knowledge in today's society***

In the modern economy, the change from an industrial economy to a knowledge economy is a must and an inevitable trend (Goddard, A 1998; Bhatt, G 2001; Bierly, PE, EH Kessler and EW Christensen 2000; P.D.N Tien 2018). In which, the factor that plays an important role is knowledge. Knowledge is a key factor in helping to change, improve, and create products in the knowledge economy. For the industrial economy, investment in financial and physical facilities is to promote production and business activities (Burk, M 1999; Davenport, T and L Prusak 1998; Davenport, T and L Prusak 1998b). As for the knowledge economy, it is necessary to invest in the creation and effective use of knowledge (Goddard, A 1998; Bhatt, G 2001). American companies rate 50% of investments in training helps to improve organizational performance (Jodlbauer, S., Selenko, E., Batinic, B., & Stiglbauer, B. 2012). At the same time, worldwide companies invest billions of dollars in employee training every year (Abd Rahman et al., 2013). To create a foundation for knowledge development in the new economy, scientific education and training to help improve knowledge and serve economic development in the new era is importantly significant (Bedford, 2013; Tian et al., 2009).

Educational institutions have such a long history in relation to many aspects of knowledge that it must be affirmed that the main task of educational institutions has gradually been shifted to organization knowledge management. In addition, higher education institutions are in the knowledge business because they are involved in the process of creating, disseminating knowledge and training students (Rowley, 2000; P.D.N Tien 2018). Research by Maponya (2004) has demonstrated that, through the use of knowledge management activities including: knowledge creation, storage, distribution and dissemination, higher education institutions can achieve their goals in a rapidly changing society, so their performance would improve (Maponya, 2004). In universities, knowledge management helps to create tools to support curriculum, create knowledge repositories, convert information into knowledge to improve access to generated knowledge as well as enhancing the knowledge environment by providing innovative technical solutions for the use and reuse of knowledge resources (Rowley, 2000; P.D.N Tien 2018).

Research has shown that the knowledge management process contributes to the improvement of the educational environment by providing new teaching methods, and connecting the relationships between faculties, staff, and employees and students (Aurelie Bechina Arntzen et al., 2009). In addition, there are many studies that also demonstrate that knowledge management in universities is of vital importance to increase the quality, the effectiveness of education and research to retain good researchers, develop new curricula and are cost-effective as well as allowing to better meet the expectations of students (Biloslavo & Trnavčević, 2007).

Currently, we are living in a period where the world economy is transforming from an economy based mainly on the limited resources of nature to an economy of information and intelligence. Natural resources are left out of the competitive agenda, with knowledge and skills alone as resources that create a sustainable competitive advantage.

In 1995, Peter Drucker, a leading global expert on management consulting, author of the famous book "Management Challenges in the 21st Century" commented: "We are entering a knowledge society, in which the basic economic resource is not capital but knowledge" and "Knowledge has been and is a major economic resource and a dominant source of competitive advantage" (Kimiz Dalkir, 2005; P.D.N Tien 2018).

Knowledge has been recognized as an important motivation and resource for productivity, social, educational and economic growth in this 21st century. However, this has given rise to the pursuit of knowledge by individuals, businesses, organizations and corporation. From this perspective, it should be asserted that knowledge is at the core of all human efforts, and that the overall value of knowledge depends on the extent to which it is shared and used by others. Over the centuries, many Scholars have attempted to define knowledge (Magnus O. Igbinovia, Iguehi J. Ikenwe 2007). Some authors have defined knowledge as something that develops in people's minds by a combination of data, information, and experience. Likewise, knowledge is the professional outcome that is accumulated and formed as one continues to interact, use, practice, and experiment information (Kuczaj, T. 2001; Uzuegbu CP, Arua U. 2015; P.D.N Tien 2018).

However, knowledge is facts, skills, ideas, abilities [know-how], insights, and insights that someone possesses through education, intuition, and deeply understood experience. Knowledge can be viewed from three aspects: simple, subjective and objective view (McAdam R, McCreedy S. 1999). The simplified view is used to introduce the concepts of information management, showing the hierarchy from data to intelligence; The subjective view presents knowledge as a state of mind in reality. Meanwhile, the objective view holds that knowledge can be discovered, improved, stored and transferred (Mutula SM, Mooko NP, 2008; P.D.N Tien 2018).

Conceptually, there are two types of knowledge; implicit and explicit knowledge. The first is informal, visual, unmodified, personal knowledge embedded within the organization, rooted from experience. For instant: expertise, skills, technical know-how, etc. It should be noted that implicit knowledge represents greater value to an organization and employees should be motivated to share that knowledge through face-to-face interaction, mentoring, brainstorming, best practices community, etc. Furthermore, valuable tacit knowledge should be identified and converted into systematized knowledge as it is a unique asset. Similarly, explicit knowledge is formal and systematized. That is, knowledge in written form can easily be transferred, communicated and stored, such as books, documents and electronic databases, etc.

### ***Open knowledge management in higher education***

Open knowledge management is a concept that has appeared explosively in all aspects of life in recent times. The exponential growth of open knowledge management in this knowledge era stems from the realization that (especially tacit knowledge) is an asset that needs to be nurtured, maintained, shared, improved and disseminated within an organization to provide solutions to organizational problems. However, open knowledge management has been defined by different scholars. There are many views, for example, open knowledge management is used to refer to various techniques and technologies used to organize and build upon knowledge and expertise (Mutula SM, Mooko NP, 2008; P.D.N Tien 2018). The concept of open knowledge management refers to the explicitly organizing knowledge through a specific, organized and systematic process for acquiring and controlling the flow of knowledge (Nonaka I, Takeuchi H. 1995; J. IKENWE, Ogagaoghene U. IDHALAMA, C. A. O. I. 2019). This is to ensure that organizations achieve their mission and state their vision.

According to some authors (Frost. 2014), open knowledge management requires: Capturing knowledge in a central repository; Identify the types of knowledge needed to support the university's growth strategy; The process of collecting, classifying and disseminating information throughout the educational institution; Assess the educational institution's current knowledge base, identify and fill in knowledge gaps; IT to help organize and store information; Provide access to tools. The team (Nnadozie CO, Nwosu CC, Ononogbo R U, Nnadozie CD. 2015) described open knowledge management as a process of extracting knowledge and putting it to use to promote learning and productivity in an educational institution. It involves refining and transferring personal knowledge into widely disseminated organizational knowledge.

A previous study (Zhao J. 2010; Chu KW, Wang M, Yuen AH. 2011) showed that open knowledge management in schools can help to acquire, apply and then reinforce the knowledge, experience and competence of teachers. Open knowledge management helps experienced teachers to transfer their experience to so-called less experienced teachers. To ensure effective knowledge management is fully implemented in the school environment, there are things that need to be put in place (Rodrigues LLR, Pai R. 2005; P.D.N Tien 2018).

Take the case of Paris as an example, when an innovative university was founded and opened in 2013, open 24/7, here, there are no teachers, books or tuition. Students worked on projects and undergo a number of internships at designated levels. After completing the projects, they would earn points for them to go to the next level. In the future there will be many changes in the way of teaching and learning. Teaching content, roles of lecturers and students. The logic of educational systems should be reversed so that it is the system that is more relevant to the learner than the learner to the system. This is the essence of personalization and application of open knowledge management in higher education at this university.

Knowledge management concerns all: individuals, groups, organizations, communities and countries. Actively managing open knowledge can stimulate

information exchange and innovation through the free flow of ideas. As a multidisciplinary field, it is making the most out of knowledge to achieve educational institution performance, competitive advantage, innovation, integration and continuous improvement of individuals, educational institutions, and organizations, community and country. Globally, effective open knowledge management is now accepted as a key motive of processes, products and services. Every day, knowledge is being applied in all fields around the globe.

A previous report (Ron Y. 2005) asserted that, in an effort to achieve better goals in higher education, open knowledge management should encourage its adoption. Effective open knowledge management reduces the tendency to repeat mistakes by using more systematic and collective processes. This can drastically improve the quality of higher education and services within the educational institution. The output profit margins of such an approach would have the potential to foster new ideas for continuously improving knowledge in higher education institution. This might greatly contribute to improving organizational excellence, namely: Significant cost reduction for universities; Creating opportunities for growth and expansion; Increasing profits and value for university products and services.

The author (Ron Y., 2005) argues that knowledge is simply the basis for everything we do. In addition, in effective open knowledge management, accelerating knowledge creation is the foundation for innovation. It provides increasingly intelligent products and services based on open knowledge. Better learners' ability to collaborate on knowledge will enhance knowledge creation. Ideas can now be turned into innovative products and services much faster. The knowledge economy in the context of today's profound economic recession in the world will fundamentally and comprehensively transform economies. To harness, restructure and innovate the higher education institution for better performance, it must be a commitment based on the application of strategic knowledge assets. (Roknuzzaman M, Umamoto K. 2009) stated that, universities needed to introduce and apply the best knowledge in order to attract the rapid and unprecedented development, the right decisions, the tools and the appropriate method should be applied. In this rapidly changing world, there are some certainties: Leaders of economies, industries and institutions of higher education will always need the most relevant information and knowledge; Effective knowledge acquisition strategies and methods will always change and can also be adjusted; To survive and remain relevant/successful in the global economy, graduates need to know how to effectively manage and apply knowledge for productivity in anything they do; Cost inefficiencies due to the lack of knowledge and poor knowledge flows will no longer be accepted in the 21st century; The knowledge economy is expected to be all-encompassing. Although there have been research documents on knowledge management, they are mainly carried out in organizations or higher education institutions around the world.

## **Conclusion**

From the above studies, we found that in countries with a developed education system. Open knowledge management has been receiving attention, its application has been and is still bringing significant efficiency in the higher education system. However, there has not been any research and application of

open knowledge management in higher education so far in Vietnam, so this research is necessary, in line with the development stage of science -technology, economy - society, higher education today.

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