An International Comparative Study on Digital Literacy for Learning

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국 문 요 약

우리사회의 지속적인 ICT 발달과 함께 코로나19 창궐 등의 예상치 못한 사회적 상황이 발생하면서 비대면(untact) 교육을 위한 디지털 기술 사용이 우리 사회에서 차지하는 비중이 더욱 높아졌다. 이와 같은 상황에 적응하는 양상은 디지털 기술을 활용하는 능력 수준에 따라 사람들 간에 많은 차이를 보인다. 이와 같은 디지털 기술을 활용하는 능력 수준은 디지털 기술 활용도에 영향을 주는 요인으로 중요하게 여겨진다. 과거에는 디지털 기술을 활용하는 능력 수준이 연령, 성별 등의 인구통계학적 요소에 따라 결정되는 것으로 인식 되었으나, 최근 연구에서 인구통계학적 요소뿐만 아니라 디지털 기술을 활용하는 능력인 디지털 리터러시 수준이 중요해지고 있다. 특히 우리나라는 다른 나라에 비해 ICT 기술이 발달하였음에도 어떠한 요소들이 ICT기술이 학습에 사용되는데 영향을 미치는지에 대한 연구가 부족하다. 이에 따라 본 연구에서는 우리나라 실정과 다른 나라와의 비교를 위해 핀란드와 우리나라 20-30대를 대상으로 설문한 내용을 분석하여 학습을 위한 디지털 기술 사용의도에 영향을 미치는 요인들을 살펴봄으로써 디지털 기술 사용의도에 대한 보다 깊은 이해를 제공하고자 한다.

핵심어: 디지털 리터러시, 비대면 교육, 국제비교연구

Ⅰ. Background and Research Purpose

Education and technology have become inseparable in our everyday lives. Information and communications technologies(ICT) are actively used for education, and the ICT-enabled market continues to grow. The size of so-called "Edu-tech" market is around 142 billion dollars globally and will continue to rise to 342 billion dollars in 2025 (Holon IQ,2019). Many researchers have been studying how to develop educational technologies and how to effectively use those technologies in education. However, there is not to many studies focusing on people's abilities and skills to use overall digital technology (i.e. Digital literacy:; Rubbla and Bailey,2007) or to efficiently find the information they need (i.e. Information literacy:, Zurkowski, 1974). Digital literacy refers to the ability to use digital technology and when and how to use it (M. Rubbla and G. Bailey, 2007).It is the ability to use information and communication skills for discovery, evaluation, creation, and communication, and it requires cognitive and technical skills (American Library

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Association). Information literacy is the ability to solve problems by using the right searching strategy, right information sources and applying suitable technology to the information problems required for one's works (Zurkowski, 1974). It is the ability of individuals to know when they need information, to identify, evaluate, and use it efficiently (ACRL, 2000).

The purpose of this study is to examine the effects of digital literacy and information literacy on the intention to use digital technologies for learning. There are studies on the role or effect of digital literacy or information literacy in a specific country, but there is alack of international studies which compare digital literacy or and information literacy of two or more different counties. This study aims to conduct an international comparative study by examining the effects of digital literacy and information literacy on the intention to use digital technologies for learning in Korea as well as in Finland. Our basic research questions can be summarized as follows.

RQ1: Are digital literacy and information literacy of Korean people and those of Finnish people different?

RQ2: Is there an average difference in Korea and Finland in terms of the effects of digital literacy and information literacy on the intention to use digital technologies for learning?

Ⅱ. Research Model

In order to develop our research model, we adopted Unified Theory of Acceptance and Use of Technology 2 (UTAUT2: Venkatesh et al., 2012) which are widely used to predict the intention to use digital technologies. In this theoretical framework, the predictors of intention to use (i.e. performance expectation, effort expectation, habitual behavior, hedonic motivation) are indicators of openness to new technologies. In addition to these factors, we added the literacy variables as key antecedents (i.e. digital literacy and information literacy) to UTAUT2 predictors. The research model can be presented as follows.
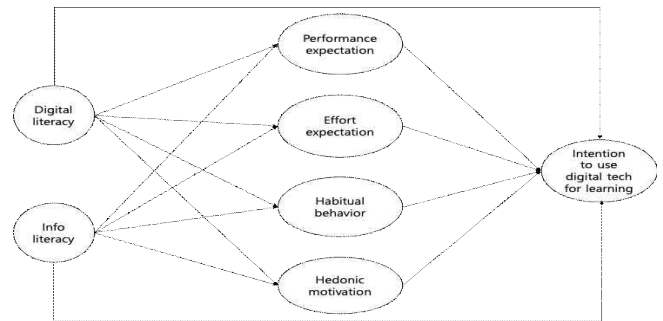
<Figure 1> research model

Ⅲ. Methodology

For the purpose of this study, Finland and Korea were chosen as our research subjective. These two countries are one of the leading ICT powers in Asia and Europe, respectively, and countries which survive global ICT ecosystem led by the U.S. and China. In addition, these countries have the leading IT manufacturers such as Nokia and Samsung Electronics. Those countries also have global tech-startups. For example, there global mobile apps such as Angry birds and Crash of Clan in Finland, and Pinkfong and lineage M in Korea. ICT infrastructure of two countries, such as internet usage and smartphone penetration, is rated as the world's top. However, while the evaluations of education in both countries are similar, their philosophies are different. Both countries have considerable interest in education, and their education systems are rated as the world's most and second efficient. But while Korea focuses on relative rankings, Finland is committed to equal and personalized education. Thus, it is suitable for the international comparative study because its different philosophies on education with similar level of ICT infra.

As digital native is known as a generation born after 1980 (Ng 2012), we plan to conduct an online survey of people in their 20s and 30s in Finland and Korea. Our survey items include basic demographic information and the average use of digital technology (e.g. average frequency of using hardware and software, level of proficiency of using software). Based on previous literature, we also develop survey items to investigate each level of the factors in our research model (i.e. digital literacy, information literacy, performance expectation, effort expectation, habit, hedonic motivation, intention to use digital technology for learning).

By analyzing survey results, we expect to know the

differences between two countries regarding overall frequency of using hardware and software as well as the level of proficiency of using software. To analyze path coefficient, we are planning to use PLS-SEM for each country. Furthermore, to compare path coefficient between countries, multigroup analysis (MGA) will be conducted.

Ⅳ. Expected results

This study will present the difference of digital literacy and information literacy between the two countries, and the effect difference of factors affecting intention to use digital technology for learning between the two countries. We expect that this study will help understanding digital literacy and information literacy for learning. Based on this understanding, we can suggest efficient strategy for encouraging to use digital technology for learning in each country.

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