Why Did They Choose ICT Materials?

Heo, Shin-hye

Professor, Department of History Education, Hannam University, Korea
angelashh@hnu.kr

Abstract

The purpose of this study is to investigate the views on utilizing ICT material, especially the reasons for ICT material choice. Numerous recent studies have demonstrated increased use of electronic devices including smartphones in educational settings. But the reasons for using it as a learning tool have not been relatively researched from the point of view of pre-service teachers. Therefore, this study analyzed the pre-service teachers' thinking about utilizing ICT material and their learning experience. In that regard, data was collected in various ways such as surveys, interviews, and brief writings of participants. According to the study result, pre-service teachers were motivated in utilizing ICT material rather than text material. That is the reason why, as adult learners, especially pre-service teachers could be more motivated in self-directed learning environments. This study will be useful in considering ideas for the instructional design of pre-service teachers.

Keywords: ICT Materials, ICT Learning, Pre-service teachers Teacher, Adult

1. Introduction

We have seen that in a society increasingly saturated with technology young people are engaging with digital cultures in which they need and expect to be able to create and manipulate media for social, cultural, and economic purposes. We have also seen that they need support to ensure they have the skills, knowledge, and experience to enable this. Therefore, it is important to support students' digital literacy so that they can effectively participate socially and culturally [1]. Indeed, for the recent several decades, information and communication technology (ICT) learning environments have been readily observed in most courses at all grade levels and subject areas in various level schools, in higher education, and in the corporate world. Simple observations of growth in number of ICT learning environments are more enough to emphasize the importance of the technology advancements, just as the invention and spread of printing presses. It is known that the use of computers is growing. Making them a productive tool in education is also vital for the facilitation of learning [2].

With technological development, learners are required for acquiring new skills. Especially, the skill to use tools for working means information literacy and digital literacy. This skill seems to be the most critical skill for students because of the development of IT and the smart environment in the era of fusion and convergence

[3, 4]. Convergence nowadays tends to emphasize in most education and training categories.

In the area of education, convergence is required to utilize the knowledge and functions of various disciplines to solve real-life problems, and convergence could have occurred naturally in this process [5, 6]. In a forum, 'Learning & Technology World', the skills for learners of the 21st century were proposed, these skills are followed as (1) thinking skills, (2) working skills, (3) skills for living in the world, and (4) skills to use tools for working [7].

With the help of highly advanced information and communication technology, many educators around the globe have attempted to integrate ICT into their teaching curricula [8]. Although it has insisted the change of social and cultural environment from decades ago, considering the related researches about schools and classrooms' situation, those technological changes and discourses have still troubled in adapting educational situation. It seems to be narrowing the gap between being known and being practiced will be a big challenge. Therefore, this study tried to give practical experience and reflection by taking research about pre-service teacher' choice reasons at the same time.

According to the research about pre-service teachers' attitudes about smart learning, they frequently used smart devices. But the type of utilizing smart devices was broadly 'limited user'. Generally, pre-service teachers showed a great tendency to concentrate on searching for information [9].

If it is like that, what kinds of material did pre-service teachers prefer who need to teach their students with ICT materials in the future prefer that? And What were the reasons. What was the reason why pre-service teachers' choice motive relating to ICT materials? How many pre-service teachers liked to do that? What kinds of needs and requirements could be making reasons for pre-service teachers' choice? This research tried to answer these questions.

2. Methodology

2.1 Participants and Research Context

The participants of this study were 42 pre-service teachers majoring in history education at a university in South Korea. They took 'Materials and Methods in Teaching History, the purpose of this course was to improve pre-service teachers' subject knowledge and understanding of secondary school textbooks and to foster abilities for teaching their pre-service teachers in the future. In these abilities, the skills and judgments for appropriate selection in their teaching process are included. Therefore, the participants of this study were required to search the materials for more effective teaching in dealing with a certain history topic. Furthermore, the participants demand the ability to strategically develop questions focused on the topic. Therefore, for more effective teaching, the participants have required the ability to both search materials and develop questions.

To improve these abilities, this course consisted of two parts. The first part was the process of searching for proper materials about the introduced subject topic by a professor. The second part was the process of developing an effective question for secondary pre-service teachers by implementing those materials. In these processes, the participants have been used different materials; the first was text materials, and the second was picture materials, they were called traditional teaching materials. The third was implementing ICT materials called digital content, which could be searching for proper teaching materials through their Smartphones including tablet PCs.

2.2 Data Collection

Data was collected in various ways such as through surveys, interviews, and brief writings of participants. Both quantitative and qualitative methods were considered to offer a more balanced study result. The questionnaire was conducted as a quantitative survey to find out the degree of utilizing ICT material in pre-service teachers' learning that is, measuring frequency through the survey. Interviews and collecting open-ended writing responses were conducted as qualitative methods to identify pre-service teachers' views.

2.3 Data Analysis

For analyzing data, both quantitative and qualitative methods were also used. Excel software was used for quantitative analysis, and Knowles' theory was used for qualitative analysis. In Knowles' theory, the concept derived from the characteristics of adult learners is useful for qualitative analysis.

The characteristics of adult learners were introduced in comparison with the learner of children. Adult learners' characteristics were explained as follows: 1) self-motivated, 2) adult learner experience, 3) readiness to learn, 4) orientation to learning, and 5) motivation to learn [10]. Therefore, these types could be useful tools for qualitative data analysis.

Furthermore, this study will analyze pre-service teachers' choice motivations through their brief writings about ICT material choice, thus it tries to find implications for learning for pre-service teachers called early adult learners in this ICT learning milieu.

3. Result and Analysis

3.1 What did they choose?

As you have seen below in figure1, most of the pre-service teachers of this course responded 'positive' in selecting ICT materials. Respondents were 42 pre-service teachers; they could choose just one item. In most of them, 32 pre-service teachers chose the ICT materials, it was 76% of pre-service teachers in this course, which was the highest proportion. This research result presented a striking contrast to the text materials. Although the choice of pre-service teachers about picture materials was not low level as the text materials, it was also a relatively low choice.
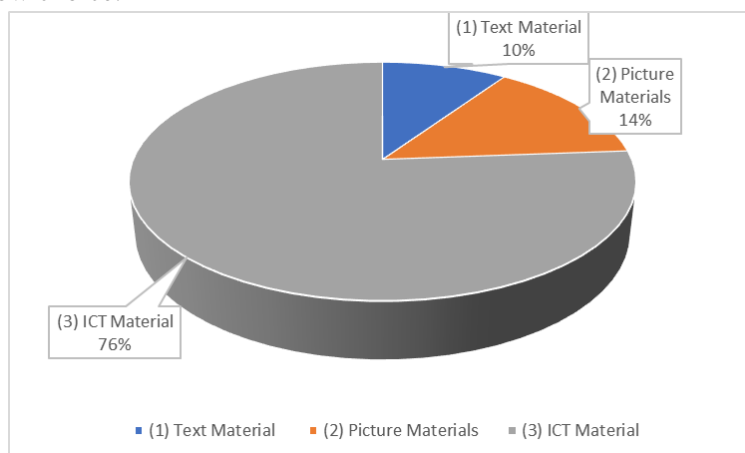

Figure 1. The distribution of pre-service teachers' choice

This study result means that the pre-service teachers' perception of using ICT materials for their teaching materials was so positive. What were the reasons? Those could be identified in pre-service teachers' brief writings about their choice reasons. The reasons could see more concretely in the table1.

3.2 Why did they choose ICT materials?

Respondents were allowed to give multiple responses. Exceptions of non-respondent 2persons, a total of 62 views were described to the question.

Table 1. The main descriptions of the pre-service teachers about their choice

Categorization	Proportion (response)	Main descriptions
(1) Self-motivated	87% (54)	Self-directed choose
		Searching process
		Self-developing materials
		Choose by myself
		Self-directed
		Self-directed choose
		Adapting new materials
(2) Oriented to learn	13% (8)	Implementing new information
		Adapting new information
		Adapting knowledge
		Interesting materials

As you saw the table 1, the pre-service teachers' descriptions were categorized as the theory of Knowles. It could be classified according to the characteristics of adult learning. These types were adapted from Knowles' learning theories, please; refer to the analyzing tools in chapter2. As you have seen table1, the first type, that is, the 'self-motivated' type was shown in many participants, they described the reason of choice such as 'searching process', 'interesting materials' and 'adapting new material', the type of self-motivated was favored by 87% of the respondents. It was most of them.

Through this comparative table, the study result could be more showed clearly. It was found that more than half of pre-service teachers chose ICT materials. The research results showed that ICT materials were more closely linked with learner motivation than with only new skills. In other words, because ICT materials were only new technologies, they did not attract pre-service teachers but were more appropriate materials for learners' motivation.

According to Knowles's learning theories, pre-service teachers be called early adult learners, Knowles emphasizes that adults are self-directed and expected to be responsible for decisions. Therefore, adult learning programs must accommodate this fundamental aspect. Knowles's learning theories and andragogy make the following assumptions about learning design: (1) Adults need to know why they need to do something, (2) Adults need to learn experientially, (3) Adults' approach learning as problem-solving, and (4) Adults learn best when the topic is one of the immediate values.

In conclusion, andragogy means that instruction for adults needs to focus more on their learning process and less on the content being taught. Instructors need to adopt the role of facilitator or resource rather than lecturer or grader [11]. This is because adult learners have a higher level of motivation when they are allowed to take the self-directed.

4. Conclusions

This study result has shown the pre-service teachers' perception of using ICT materials. Pre-service teachers' perceptions of using ICT materials were very positive. This result also presented the possibility that pre-service teachers could be more self-directed learners. This is because pre-service teachers can become more self-directed in a learning environment that implements ICT materials. And it means that a self-directed environment can be a critical background for motivation.

The Implications of these results are very significant. It means that Implementing ICT materials were more linked closely with learners' motivation than with only a new skill or a new strategy for learning. Therefore, despite negative discourses on the use of ICT, it is necessary to focus on the aspect of how to use this technology positively for pre-service teachers called digital nomads.

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