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Investigating EFL Learners' Reactions to Digital Competence using the DigComp Framework

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Abstract

Since developing digital technology requires new skills in digital literacy, digital competence also has become a keystone in English classes. This study explores three aspects of English as a Foreign Language (EFL) learners' digital confidence: information and data literacy, communication and collaboration, and digital content creation, based on the European Digital Competence Framework for Citizens (DigComp). The participants were 150 Korean college students enrolled in two general English classes, and their English proficiency levels were from basic to advanced; each level consisted of 30 participants. In order to assess their digital confidence, I designed a Google survey form and collected data during two semesters. The survey results revealed that the participants had highest digital confidence in information and data literacy and overall, the female participants showed higher digital confidence than their male counterparts. It also showed that the learners' English proficiency and computer skills are important factors.

Keywords: *Digital Competence, DigComp, EFL, English Learning*

1. INTRODUCTION

The advantages of using technology in EFL include language proficiency development and boost motivation to engage in self-learning by using real context. It also affords English language learners more opportunities to search information, communicate, and collaborate in a digital space so as to require obtaining digital literacy skills [1]. As a response to the increasing presence of technologies such as Edtech in class, digital competence becomes one of the key competences for the second and foreign language classroom [2-3]. Thus, language learners need to attain greater amounts of participation, access, engagement, and benefits through their levels of digital literacy which allows learners to use digital technology resources available online effectively. From this perspective, it is important to investigate how language learners are able to integrate a wider array of digital learning tools in online literacy environments and to understand their reactions towards digital competence for language learning.

Digital literacy can be defined as an ability to understand and use information, create communication, and construct knowledge to enable constructive social action and reflect the learning process in a variety of contexts [4]. In particular, DigComp, which has been used as a reference frame for digital competence, presents the

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critical use of information technology for education (European Commission, 2022) [5]. Considering that the basic concept of DigComp can be essential criteria in language learning as well, this study applies DigComp2.2 to examine Korean EFL learners' digital competence in terms of information and data literacy, communication and collaboration, and digital content creation in English classroom.

Given that these skills are required for social interaction, participation, shared expertise, collaboration, and content creation in the class creativity, these new media affordances need to be examined. In addition, learners' use of technologies in higher education indicate that they use a limited range of technologies in educational contexts [6-7]. Therefore, an instructor would also be required to consider learners' digital competence to perform a certain task in language learning. Despite the fact that it is important to understand language learners' perception towards digital competence, there are a few studies on investigating EFL learners' digital competence itself. Hence, this study attempts to explore EFL learners' reactions towards the main skills of (1) information and data literacy, (2) communication and collaboration, and (3) digital content creation to provide efficient teaching strategies when using digital technology in language classroom. In addition, this study also explores the important factors for digital competence to provide guidelines for how language educators can approach the incorporation of technology in their teaching.

2. REASEARCH FRAMEWORK

This study was applied to DigComp2.2, which comprises five areas to assess digital competence as shown in Figure 1[8]. Among the five areas, this study explored three criteria: (1) information and data literacy, (2) communication and collaboration, and (3) digital content creation since it provides a general reference that can assess digital competence [8].

Figure 1. DigComp 2.2

Table 1 shows nine questions/statements divided equally amongst the three criteria sections to investigate the participations' reactions to digital competence based on DigComp.

Table 1. Nine questions for three sections of digital competence

Criteria	Contents	Question numbers of the survey
1. Information and data literacy	Browsing, searching, filtering data, information, and digital content	Q6. I have confidence to find or search for information in using digital tools for English learning.
	Evaluating data, information,	Q7. I have confidence to read information in using

	and digital content	digital tools for English learning. Q8. I have confidence to evaluate or manage information in using digital tools for English learning.
2. Communication and collaboration	Collaborating through digital technologies	Q9. I have confidence to interact or communicate in using digital tools for English learning. Q10. I have confidence to participate in online communities (Facebook, Instagram, or others) for English learning. Q11. I have confidence to collaborate or share information in using digital tools for English learning.
3. Digital content creation	Developing digital content, integrating, and elaborating digital content	Q12. I have confidence to create or develop content in using digital tools for English learning. Q13. I have confidence to understand copyright in using information for English learning. Q14. I have confidence to integrate information in using for English learning.

3. RESEARCH METHODS

3.1 Participants

The participants of this pilot study are 150 Korean university students (male: 81, female: 69) who attended two general English courses: 1) reading and writing, and 2) reading and speaking. The total number of participants was 410 Korean EFL learners, but the researcher randomly selected 150 of the participants, consisting of 30 participant per level, while considering their English proficiency on a five-level scale from basic to advance, based on their TOEIC scores (0–200: level 1, 201–400: level 2, 401–600: level 3, 601–800: level 4, 801–999: level 5). The participants' ages ranged from 18 to 20 years. They had lived in English-speaking countries from between 0 to 20 years: 0–1 (*N*=125, 83.3%), 2–4 (*N*=12, 8.0%), 5–9 (*N*=3, 2.0%), 10–14 (*N*=4, 2.7%), 15–20 (*N*=6, 4.0%). They use digital tools for English learning; Never (*N*=9, 6.0%, rarely (*N*=27, 18.0%), sometimes (*N*=37, 24.7%), often (*N*=50, 33.3%), and always (*N*=27, 18.0%) and prefer to use a computer (*N*=120, 80.0%) more than using a cellphone (*N*=30, 20.0%) for English learning. The female participants showed better English proficiency than their male counterparts, but it does not show significant relationship between gender and computer proficiency. In addition, the participants' preferred methods of learning English were listening (28%), reading (25.3%), vocabulary (16.1%), speaking (15.3%), writing (9.3%), and grammar (6%), and there was no relationship between their preferred learning skills and English proficiency.

3.2 Research Question

This study sets out to explore EFL learners' digital competence on DigComp by looking at the ways in which their use of technology can assist language learning. This leads the study to two research questions: (1) What are language learners' reactions to the selected three criteria of digital competence in DigComp? And (2) What are the important factors that influence digital competence for language learners?

4. DATA ANALYSIS AND RESULTS

The researcher created 16 questions, (Q1) their English proficiency, (Q2) spending time for living English-speaking country, (Q3) computer skills, (Q4) satisfaction to using digital tool for English learning, (Q5) their confidence to use digital tools (Q6-14), their preferred learning skills (Q15), and their competence skills for digital tools (Q16). The participants were asked to answer each question through a Google form. The degree of their confidence was measured by the 5-point Likert scale. The data was collected from two general English courses during two semesters.

4.1 Learners' Reactions for Digital Competence

The participants' responses for the nine survey questions about the three digital competence criteria show high consistency with Cronbach's α=.88. Many participants (*N*=83, 55.3%) responded that using online tools could help to improve their English proficiency skills, but there was no significant relationship between their English level and their computer skills. Based on their responses, as illustrated in Figure 2, they show their highest level of confidence for information and data literacy while the skill in which they had the lowest amount of confidence was communication and collaboration.

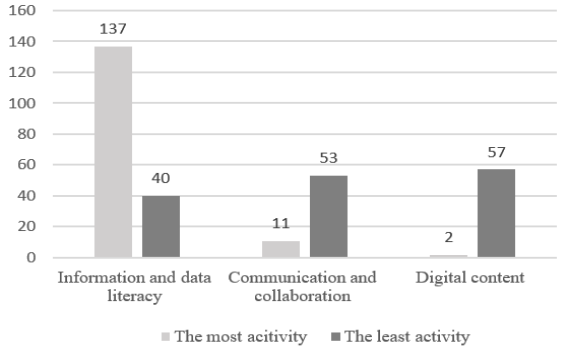

Figure 2. The participants' confidence in three areas

The Figure 3 shows more that participants' information and data literacy skills were higher than the two other criteria and, overall, the response to communication and collaboration skills was lower compared to other areas.

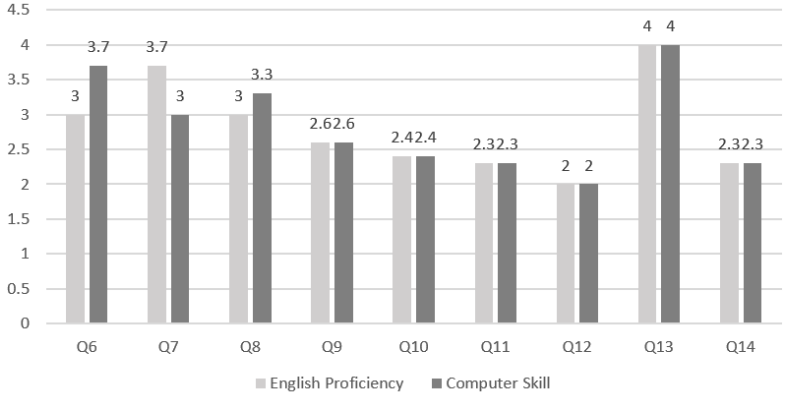

Figure 3. The participants' confidence for nine questions

In the same vein, among the nine questions, their responses for Q6, Q7, and Q9 were higher than others, but the answers for Q11, Q12, and Q14 were lower than others. Questions 6 and 7 are about information and data

literacy skills and English learners can be made aware of the importance of understanding copyright. However, the participants do not have the confidence to collaborate or share information, create, or develop content, and integrate information. The participants showed confidence for finding or searching information (Q6, 66%), evaluating or managing information (Q8, 47.3%), and reading information (Q7, 42%) in sequence. They also expressed their confidence in interacting or communicating using digital tools (Q9, 26.6%), collaborating or sharing information (Q11, 25.3%), and participating (Q10, 13.3%) in online communities. In addition, they felt high confidence to understand copyright in using information (Q13, 66%), creating or developing content (Q12, 47.3%), and integrating information (Q14, 42%).

4.2 Important factors for Digital Competence

There was significant correlation between participants' English proficiency and computer proficiency in utilizing digital information. They answered that their English and computer proficiency have significant importance in communication and collaboration when using digital tools to study English. Table 2 demonstrates that the participants' responses for all nine questions were correlated with each other based on the Pearson correlation. Among them, reading information (Q7) and evaluating or managing information (Q8), as well as reading information(Q7) and interacting or communicating (Q9) for using digital tool confidence showed higher correlation. In particular, their English proficiency and computer skill was also essential for digital content creation. However, computer proficiency does not show a significant relationship with understanding copyright when using information.

Table 2. English and computer proficiency for three sections of digital competence

Criteria	Q	English Proficiency			Computer Skill		
		Mean	F	P	Mean	F	P
1. Information and	Q6	3.02	2.93	0.023*	3.69	2.71	0.032*
data literacy	Q7	3.70	4.21	0.003*	2.99	27.7	0.000**
	Q8	4.17	2.58	0.040*	3.25	17.2	0.000**
2.Communication	Q9	2.59	18.25	0.000**	2.59	3.01	0.020*
and collaboration	Q10	2.42	28.72	0.000**	2.42	3.24	0.014*
	Q11	2.28	8.30	0.000**	2.28	2.93	0.023*
3.Digital content	Q12	2.02	8.90	0.000**	2.02	4.17	0.003*
Creation	Q13	4.00	9.46	0.000**	4.00	1.97	0.101
	Q14	2.30	1.42	0.000**	2.26	9.42	0.000**

Table 3 demonstrates that gender was also considered critical while reading information (Q7), integrating or communication information (Q9), creating or developing content (Q12), and integrating information (Q14) does not have a significant relationship.

Table 3 Gender differences for three sections of digital competence

Criteria	Q	Gender			
		Mean		*F*	*P*
		Male	Female		
1. Information and	Q6	3.46	3.95	8.23	0.005*
data literacy	Q7	2.81	3.20	3.38	0.068
	Q8	3.04	3.49	4.77	0.030*

2.Communication and collaboration	Q9	2.44	2.76	2.23	0.137
	Q10	2.18	2.71	13.95	0.000**
	Q11	1.96	2.65	6.11	0.015*
3.Digital content creation	Q12	1.79	2.30	2.90	0.090
	Q13	3.88	4.14	9.11	0.003*
	Q14	2.11	2.43	1.95	0.164

Noticeably, the female participants showed higher digital confidence than their male counterparts. In addition, the participants' responses for all nine questions were correlated with each other based on the Pearson correlation. Among them, reading information and evaluating or managing information, as well as reading information and interacting or communicating for using digital tool confidence showed higher correlation.

5. DISCUSSION

The EFL learners' digital confidence levels were observed with two findings. First, the participants show higher confidence in information and data literacy compared to communication and collaboration, and digital content creation. Since searching abilities, processing, evaluating, and information dissemination are considered essential skills in learning, the participants seem to have a good understanding of how to use digital tools for English learning. As aforementioned, the participants do not have strong confidence in communication and collaboration, and digital content creation. Considering that English proficiency and computer skills are important factors for the two areas, it may be necessary for language learners to acquire better English skills and computer proficiency to use digital tools. This view is aligned with the finding that social networking, collaboration, and content creation require computer proficiency in using technology and positive attitudes towards digital tools [9]. Another study also bolstered this view that online participation and content creation require a more extensive skill set for learners who use the Internet [10]. Thus, a language instructor needs to implement the use of digital tools as they consider both the learners' English and computer proficiency. Notably, most participants showed a high level of confidence in understanding copyright.

Second finding is that there were significant relationships between digital confidence and gender. Some studies found male students were more likely to be intensive learners than female learners when using technology in simplistic ways such as using social networking websites or messaging apps [11]. However, this study showed that female participants had higher levels of confidence than the male participants. Thus, the participants' perspective on using digital tools may be examined further for their gender, learning attitudes, majors, or other interests.

6. CONCLUSION

Since technology affords English language learners more opportunities to search information, communicate, and collaborate in a digital space, language learners need to obtain digital literacy skills [1]. In this sense, I examined EFL learner's reaction towards digital confidence in three areas: information and data literacy, communication and collaboration, and digital content creation on DigComp. Although this study suggests the pattern of EFL learners' confidence and important factors to provide effective teaching strategies in using digital tools, there are some limitations. Since these findings were drawn from a one-time survey without open-ended questions, there would be lack of explanation to support the results. Further studies need to explore learners' attitudes towards using digital tools including their perspectives on each skill. Moreover, this study examined only three DigComp criteria out of the five areas, so the results may be different when exploring the

five DigComp areas or a different framework to assess learners' digital confidence. Despite these limitations, this study can provide salient guidelines for language learners' digital competence and their linguistic actions as well as teaching strategies.

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