

Experiences and Perceptions of Distance Learning among Early Childhood Pre-service Teachers in Korea during the COVID-19 Pandemic

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Abstract

The purpose of this study was to gain an understanding of the experiences and perceptions of distance learning among early childhood pre-service teachers in Korea during the COVID-19 pandemic, which has been spreading worldwide since early 2020. A total of 196 early childhood pre-service teachers with experience in distance learning participated in the survey, and the results of the survey are as follows. While early childhood pre-service teachers perceived a difference between face-to-face (in-person) classes and distance learning, they expressed a high willingness to take part in distance learning in the post-COVID-19 era. Convenience and usefulness were mentioned as key advantages of distance learning, while difficulties in interaction and concentration were emphasised as disadvantages. To improve the quality of distance learning in the future, they suggested that students should increase participation, while instructors should strengthen their distance learning-related capabilities and universities should enhance support through system development. The implications of this study were discussed based on these results.

Keywords : early childhood teacher education, early childhood pre-service teachers, distance learning, COVID-19

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Introduction

The COVID-19 pandemic that swept across the world in the beginning of 2020 resulted in mass school closures, and Korea was no exception. In the early days of the COVID-19 pandemic, the Korean government delayed the start of the new semester and waited for a point at which face-to-face classes were possible, but as the pandemic continued, elementary schools, middle schools, high schools, and even universities and kindergartens began to implement distance learning. As Korea has the world's fastest high-speed internet penetration rate and speed, the environment for technology-based distance learning already existed; yet distance learning at universities was almost non-existent due to prior regulations. However, in response to the COVID-19 pandemic, the Korean government began to allow universities to operate distance learning with minimal regulations until the pandemic situation stabilised (Korean Ministry of Education, 2020). As a result, in the fall semester of 2020, 99.4% of all universities implemented distance learning, compared to the less than 1% in 2019 (D. Lee & Kim, 2020). This mirrors that of many other countries around the world which implemented distance learning at all schools, including universities, as an immediate measure upon school closures (UNESCO Educational Sector, 2020).

One of the most important issues regarding distance learning at universities is the compatibility between certain majors and distance learning. In particular, there are deep concerns about distance learning for pre-service teacher education, where field experience and face-to-face interactions between instructors and students and among students are considered vital. While there is no standardised method of teacher education at universities, teacher education has been conducted in a way that focuses on field experience, such as practicum, mentoring, and emotional and cognitive interactions through face-to-face classes (Flores & Gago, 2020; Hill et al., 2020; La Velle et al., 2020; Scull et al., 2020). However, due to the unexpected situation brought on by COVID-19, Korea, like other countries, temporarily reduced the proportion of field experience and allowed distance learning instead using video content, invitation of on-site experts, and case studies (Korean Ministry of Education, 2020). Distance learning for pre-service teachers, where the need for field experience and face-to-face learning is particularly emphasised, has resulted in unease among both instructors and pre-service teachers alike. To address this and enhance the effects of

distance learning, various approaches, such as technological enhancement and the development of teaching methods suitable for distance learning, have been actively discussed and implemented.

Even amidst such efforts, distance learning for early childhood pre-service teacher education, which equips students for specialised capabilities such as the implementation of play-based and emergent curriculums, education using concrete materials, and the formation of emotional bonds between young children and teachers, requires more caution than teacher education for other age levels. This is because early childhood pre-service teachers must not only develop content knowledge and teaching methods but also possess emotional competence, such as intimacy, love, and care (Goldstein & Lake, 2000). It is difficult to expect the same level of educational effects as face-to-face classes from distance learning, but early childhood pre-service teacher education should find out its way as young children's play, development, learning, and well-being must not stop even during unexpected pandemic situations (Bae & Bae, 2022; Pawilen, 2020). In addition, it may be almost impossible to return to face-to-face classes to the same extent as before even after the end of the COVID-19 pandemic (Kim & Kim, 2021). Therefore, as proposed by Callaway-Cole and Kimble (2021), it is imperative to actively pursue quality measures for distance learning that suits the nature of the early childhood education major.

Since distance learning was abruptly implemented at universities, studies regarding distance learning, such as students' perceptions of distance learning (N. Kim, 2020; Kim et al., 2021; D. Lee & Kim, 2020; Y. Lee & Kim, 2021; Sung, 2020) and instructors' perceptions of real-time classes (Choi et al., 2020; Han & Lee, 2020) have been conducted in general or in other majors, and few studies have been conducted in early childhood education major, focusing only on field experience (Callaway-Cole & Kimble, 2021; J. Kim, 2020) or measuring the students' perception of distance learning with a single score in a university (Kim & Kim, 2021); yet, none of the studies examined the experiences and perceptions of distance learning in detail targeting pre-service teachers majoring in early childhood education.

Therefore, the purpose of this study is to examine the experiences and perceptions of distance learning conducted from the spring semester of 2020 to the spring semester of 2021 among early childhood pre-service teachers in Korea. Moreover, distance learning is

conducted in both real-time and non-real-time class formats in which instructors and students engage in non-face-to-face teaching-learning activities at different spaces or times using the internet or a broadcasting network (Korean Ministry of Education, 2018). However, research comparing and analysing the effectiveness of different distance learning types (e.g., real-time interactive classes, video content classes) is lacking (Kang, 2021). Therefore, this study also examines the early childhood pre-service teachers' satisfaction levels via the types of distance learning. The questions asked to the early childhood pre-service teachers are presented in the method section.

Method

Subjects

The subjects of this study were 196 early childhood pre-service teachers enrolled in the Department of Early Childhood Education in the Seoul metropolitan area (i.e., Seoul, Gyeonggi, Incheon). The backgrounds of the subjects are presented in Figure 1.

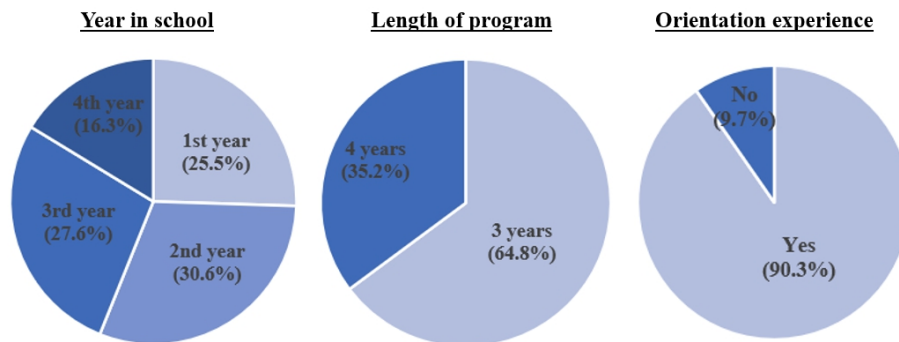


Figure 1. Backgrounds of the subjects of this study (N=196)

In Korea, early childhood pre-service teachers are educated in 3-year and 4-year programs, with three times more 3-year than 4-year programs (Korean Education Statistics Service, 2020); thus, the distribution of subjects in this study is considered acceptable. Over 90% of

the subjects received any kind of pre-training (e.g., orientation) in preparation for distance learning.

Data Collection and Analysis

A survey was conducted to examine the experiences and perceptions of distance learning among early childhood pre-service teachers, and the questions were composed based on distance learning satisfaction level surveys from Paichai University (2020) and the Korean Ministry of Education (2021) and research by D. Lee and Kim (2020). A total of 20 questions were drafted for the survey, including questions about the personal backgrounds of the subjects, the effectiveness of face-to-face classes and distance learning, the advantages and disadvantages of distance learning, satisfaction levels by distance learning types, intention to participate in distance learning in the post-COVID-19 era, and areas for improvement to enhance the quality of distance learning. Questions related to satisfaction level were measured on a 4-point Likert scale, and the remaining questions were multiple-choice questions. This study underwent IRB review (#2021-16) at the affiliated university, and the survey was conducted online from May 2021 to June 2021 using a Google Forms Survey for early childhood pre-service teachers who agreed to participate in the study. Frequencies and percentages were calculated for data analysis.

Results

First, the results of the survey on the differences in effectiveness between face-to-face classes and distance learning are presented in Figure 2. Of those surveyed, those who answered that they perceived a difference was over half (58.7%), while 14.3% answered that they did not perceive a difference. Among the reasons for the difference, ‘lack of interactions between instructors and students’ (61.8%) was most notable, followed by ‘lack of preparation or adaptation by instructors’ (15.8%). Pre-service teachers perceived that face-to-face classes and distance learning differ in terms of learning effectiveness, with the lack of interaction as the key reason.

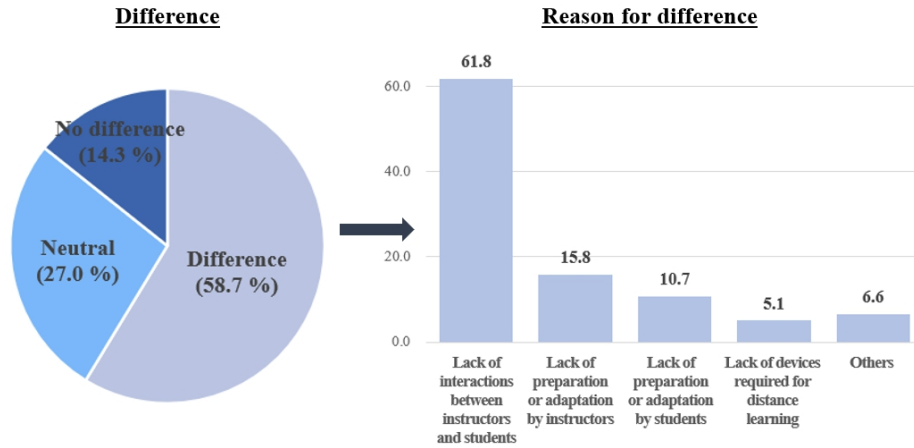


Figure 2. Differences in effectiveness between face-to-face classes and distance learning and its reasons

Second, the results of the analysis of the advantages and disadvantages of distance learning as perceived by the early childhood pre-service teachers are as shown in Figure 3. Key advantages of distance learning were ‘possibility of iterative learning and convenience’ (43.4%) and ‘utility of time and space’ (36.2%), while key disadvantages of it were ‘difficulties due to excessive assignments’ (37.2%) and ‘difficulties in concentration and participation’ (29.6%). While early childhood pre-service teachers positively perceived the convenience and usefulness of distance learning, excessive assignments due to the transition to a new format and difficulties in concentration and participation were negative aspects.

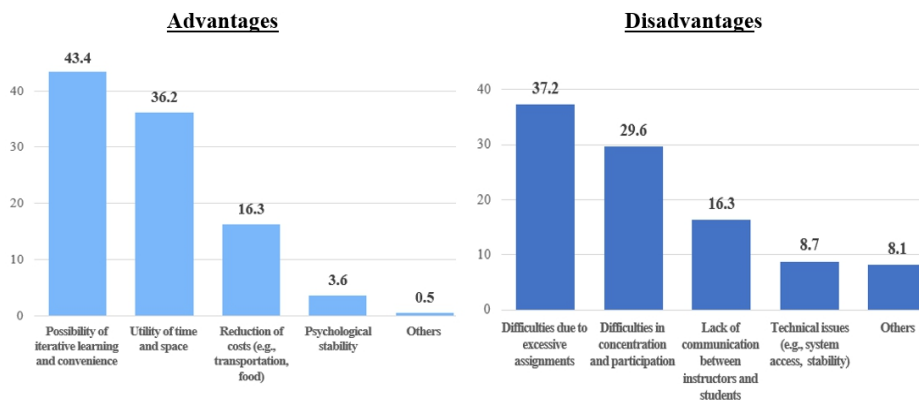


Figure 3. Advantages and disadvantages of distance learning

Third, looking at the satisfaction levels of early childhood pre-service teachers by distance learning types (see Figure 4), overall satisfaction levels were similar, at about 86.2% for real-time interactive classes and 83.7% for video content classes. A more detailed analysis of the five categories showed that satisfaction with ‘feedback on personal progress’ and ‘interaction with instructors’ for real-time interactive classes was higher than that of video content classes, while satisfaction with ‘loading speed of online lectures and video quality’ was higher for video content classes. While overall satisfaction levels did not differ significantly by types, when examined in detail, real-time interactive classes had higher satisfaction in terms of interaction and feedback, and video content classes had higher satisfaction in terms of technical aspects.

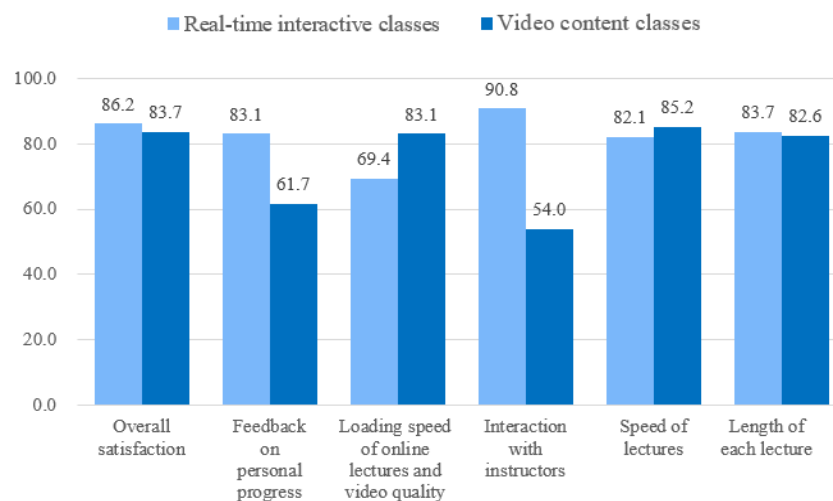


Figure 4. Satisfaction levels by distance learning types

Fourth, when asked about their intention to participate in distance learning in the post-COVID-19 era, those who answered ‘intending to participate’ (76.0%) were three times higher than those who answered ‘not intending to participate’ (24.0%). The detailed reasons for their choice are shown below in Figure 5. Key reasons for intending to participate were ‘convenience in terms of time and space’ (73.2%) and ‘economic utility’ (14.8%), while key reasons for not intending to participate were ‘low learning effectiveness compared to face-to-face classes’ (55.3%) and ‘lack of social interaction’ (27.7%).

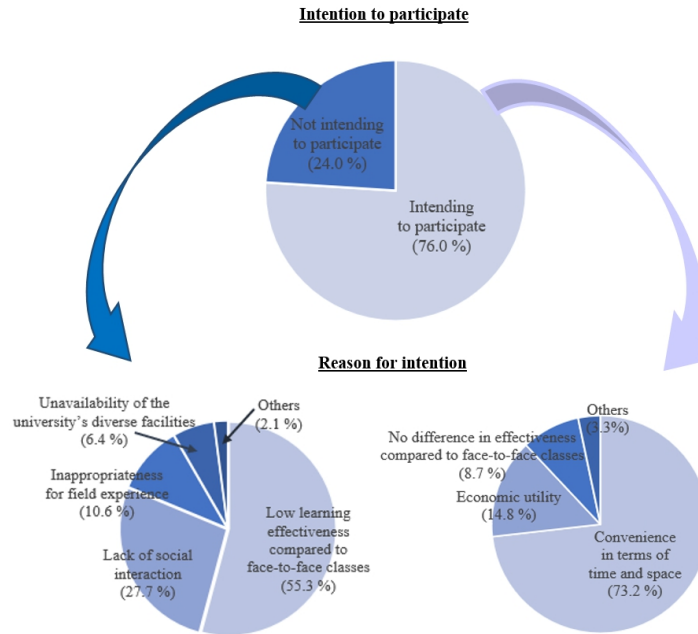


Figure 5. Intention to participate in distance learning in the post-COVID-19 era and its reasons

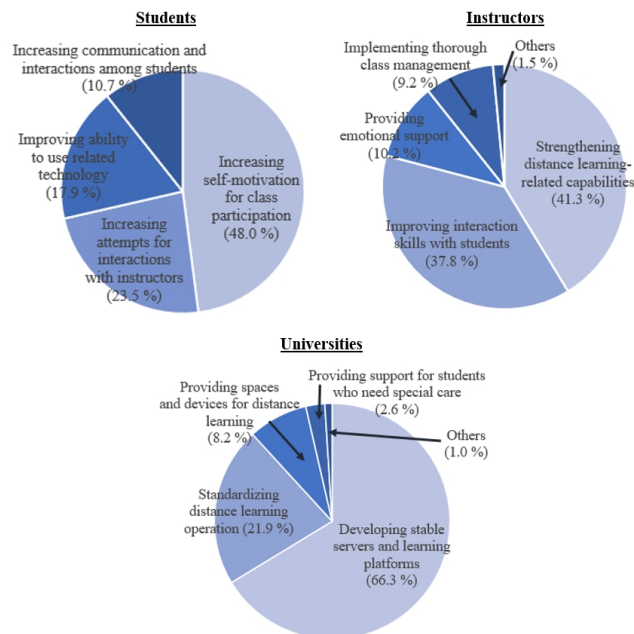


Figure 6. Areas for improvement to enhance the quality of distance learning

Fifth, areas for improvement for students, instructors, and universities to enhance the quality of distance learning in the future are presented in Figure 6. For students, ‘increasing self-motivation for class participation’ (48.0%) was the highest, followed by ‘increasing attempts for interactions with instructors’ (23.5%). For instructors, key areas of improvement were ‘strengthening distance learning-related capabilities’ (41.3%) and ‘improving interaction skills with students’ (37.8%). At the university level, ‘developing stable servers and learning platforms’ (66.3%) was the highest. In sum, the need for students to increase their own participation levels, for instructors to enhance their distance learning-related capabilities, and for universities to develop systems to enhance support were raised.

Discussion

The COVID-19 pandemic has brought about completely unexpected changes around the world with great variation in how each country coped with the panic and approached the disruption to education. Instructors and students who had to face distance learning with no preparation inevitably experienced trial and error and gradually adapted but faced many frustrations and made new attempts in the process. This study examined the experiences and perceptions of distance learning among pre-service teachers majoring in early childhood education in Korea. Discussions for the major results of this study are as follows.

In terms of learning effectiveness, early childhood pre-service teachers noted the difference between face-to-face classes and distance learning, especially in terms of the lack of interactions between instructors and students. This is also linked to the disadvantages of distance learning, reasons for not intending to participate in distance learning in the post-COVID-19 era, and areas for improvement to enhance the quality of distance learning. In reality, many instructors in the field faced these limitations and made various attempts to overcome them and make improvements. For example, to improve interactions between instructors and students and among students, which were lacking compared to face-to-face classes, instructors attempted real-time question-and-answer sessions, chats, and small group discussions, and utilised various tools (e.g., Google Jamboard, Padlet, Mentimeter). While the same level of interactions may not be possible with distance learning compared to face-

to-face classes, it is essential to continuously develop ways to further enhance interaction and participation in a distance learning environment.

The result of this study can also be linked to Palmer and Holt (2009), who suggested that how confident students are in their ability to communicate and learn online, how clearly they perceive what is required of them to succeed in online learning, and how well they perceive themselves to be doing in the class have a positive impact on their satisfaction levels with online classes. This means instructors should search for ways to increase communication with students, clearly state class goals, and provide support so that students can succeed. In other words, by helping students participate and communicate actively in a distance learning environment and by ensuring they have the tools to learn successfully, it is possible to enhance not only student satisfaction but also the quality of their learning.

While overall satisfaction levels with the two major types of distance learning (real-time interactive classes and video content classes) were similar, real-time interactive classes had higher satisfaction levels in terms of interaction and feedback. These results are also related to Paechter et al. (2010), who reported that classes that encourage students to participate through real-time interactive learning systems have higher satisfaction levels than passively watching video content in the context of distance learning. While video content classes may be advantageous in terms of time and repeatability, to obtain the same learning effects as face-to-face classes in distance learning, it is necessary to utilise real-time interactive lessons. In addition, it is necessary to maximise the advantages of distance learning through recordings and technical support so that it is possible to replay past classes. Moreover, in situations in which unilateral delivery of content is necessary, video content classes can be utilised in consideration of technical stability and repeatability, and related discussions and activities can be conducted through additional interactive classes or face-to-face classes in a form of flipped learning or blended learning.

Excessive assignments, which were pointed out to be one of the greatest disadvantages of distance learning, seem to be a transitional phenomenon that occurred in the process of switching from face-to-face classes to distance learning. Assignments in distance learning classes may require a different approach from those in face-to-face classes. Therefore, in the case that distance learning continues, it is necessary for instructors to coordinate with students the appropriate amount and method of assignments and ways to provide feedback for the

assignments. Chetty et al. (2014, as quoted in Hill, 2021) also suggested that, when providing feedback, support for self-reflection should be given so that students can solve problems based on feedback.

Meanwhile, despite answering that there is a difference in learning effectiveness between face-to-face classes and distance learning, their intention to participate in distance learning in the post-COVID-19 era was quite high at 76%, suggesting that distance learning is likely to coexist with face-to-face classes in the future as another axis of university education. This is also supported by the Korean Ministry of Education (2020)'s report that more than 70% of university students and instructors responded that 'distance learning needs to be expanded' even in the post-COVID-19 era.

Therefore, whether it is the post-COVID-19 era or the with-COVID-19 era, educators should continue to make efforts to improve the quality of distance learning, referring to the results of this study. First, students need self-motivation to participate in classes, as distance learning requires a higher level of self-motivation than face-to-face classes (Donohue et al., 2021). In order for students to gain successful experience in distance learning, opportunities for increasing self-motivation and self-discipline as well as orientation sessions to help students understand and prepare for distance learning should be provided. The stronger the students' positive perception of participating in distance learning, the higher their degree of participation and satisfaction will be (Lee, 2010; Palmer & Holt, 2009).

In addition, ways to provide emotional support should be actively pursued to ease the psychological isolation and sense of alienation felt by students due to distance learning and to increase their motivation to participate in distance learning classes. The difficulties in concentrating and participating in distance learning shown in this study are linked to the need for emotional support. Therefore, it is necessary to examine the difficulties faced by early childhood pre-service teachers with distance learning and then to resolve those and help them have successful experiences. The formation of resilience through successful learning experiences despite the unexpected implementation of distance learning is also very helpful in establishing a firm identity as a teacher in the future (Chikoko & Msibi, 2020; Lutovac & Flores, 2021) and in equipping with an ability to provide necessary support for young children and their parents in any unexpected situations in the future (Inten et al., 2021). Taken together, it is vital to ensure early childhood pre-service teachers have successful learning

experiences based on emotional stability by strengthening communication between instructors and students, holding counselling sessions, providing support for small group activities, and constructing a student-centred distance learning support system.

Second, it is necessary to strengthen instructors' distance learning-related capabilities. D. Lee and Kim (2020) also raised the need for instructors to improve their ability to utilise distance learning tools and teaching methods. Capability-building can be carried out individually as well as through collective intelligence and collaboration. Furthermore, the application of artificial intelligence (AI) to education is being widely discussed around the world. When announcing the major tasks in education in the post-COVID-19 era, the Korean Ministry of Education (2020) emphasised changes in university education using AI and also proposed its policy agenda for early childhood education, such as utilising AI for play and content development. In these situations, universities and early childhood teacher educators should prepare for the education of the future society and generation through various attempts using digital technology. In particular, instructors should seek teaching and learning methods to overcome the limitations of distance learning and possess the digital literacy necessary to successfully carry out distance learning. For example, students' motivation and learning effectiveness could be improved if instructors increased interactions and communication with students through various teaching strategies including AI technology (e.g., Mixed Reality, Virtual Reality, Augmented Reality, Metaverse) rather than instructor-centred, one-directional distance learning formats.

Furthermore, if real situations that occur in the early childhood education settings can be realized and recreated in a virtual way, there is a possibility that field experience, which is essential in early childhood teacher education, can be provided through distance learning. A series of studies that analysed teacher education during the COVID-19 pandemic (e.g., Callaway-Cole & Kimble, 2021; Flores & Gago, 2020; La Velle et al., 2020) also suggested the need for diverse and new teaching models that can incorporate field experiences into distance learning or supplement them with distance learning. Through these models, early childhood pre-service teachers are able to experience and practice interactions between teachers and young children and among young children. This requires systematic and environmental support, as well as the enhancement of the instructor's capabilities.

Finally, technical support and system development is necessary at the university level to

enable more effective distance learning. It is true that related technologies (e.g., servers, devices, programs) have improved with the progression of semesters in which distance learning has occurred. Yet, continuous efforts need to be made to develop a firm system including networks and servers that ensure stability even when many users are simultaneously connected and to develop class formats that fit each major. In addition, building a distance learning infrastructure (e.g., distance learning support centres, specialised personnel) and providing education and support to strengthen instructors' distance learning-related capabilities and maximise learning effectiveness for students should be a top priority of universities.

Conclusion

The COVID-19 pandemic has not ceased even now in 2022 and it is not realistic to return to face-to-face classes as before the onset of the pandemic. Even if the situation improves, if effective distance learning is possible, the flexibility to combine both methods is desirable rather than insisting on only face-to-face classes. Furthermore, it is crucial that efforts are made to create a future educational model that is suitable for each major. Early childhood pre-service teacher education, which this study focuses on, should find a way to blend the two learning modalities in order to maximise learning effectiveness and address various social changes. In addition, the advantages of distance learning need to be exploited and its disadvantages should be addressed.

This study examined early childhood pre-service teachers' experiences and perceptions of distance learning conducted in Korea for three semesters after the COVID-19 outbreak. We hope that the results of this study will serve as a basis to prepare more effective distance learning that considers the needs of students pursuing early childhood education major. As this study has limited subjects and likely reflects the social and cultural backgrounds of Korea, it is necessary to expand on it in future studies by examining various countries and situations while exploring instructors' experiences and new educational trials.

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