Research Article

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University Students' Satisfaction and Evaluations of Synchronous Online Learning for Physical Education Courses

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Abstract

Physical education major in higher education has been negatively impacted during COVID-19 due to the need for social distancing. Many universities have adopted hybrid or fully remote learning models to avoid these risks in this environment. Recognizing the importance of online education for physical education, this research focuses on Korean university students' satisfaction and evaluation with synchronous online learning using Zoom. The study implemented a mixed method, including exit course surveys (n=60) and individual interviews (n=4). The data was collected in the 2022 fall semester. Study results showed synchronous online education provided a flexible learning environment for physical education students. Also, university students were satisfied with synchronous online education and were willing to take these courses again next semester. Furthermore, they evaluated synchronous online education as effective in providing real-time interaction between the instructor and students. However, the interview data showed some challenges of online learning using Zoom for physical education courses. Finally, several implications are discussed for effectively constructing synchronous online physical education for higher education.

Keywords: *university students, synchronous online learning, Zoom, physical education, higher education, mixed-methods study*

1. Introduction

Online education refers to delivering education digitally and online, allowing university students to study anywhere. Due to advanced technology, online education has become a popular mode of delivering university courses in higher education, particularly during COVID-19 (Adnan & Anwar, 2020; Almusharraf & Khahro, 2020; Cole et al., 2014). As a result, many studies have explored the importance of online education in various fields and institutions. Synchronous online learning is one type of online education, and it is an educational approach where students can access course materials and complete assignments online in a real-time (Chiva-Bartoll & Fernández-Rio, 2022;

Chung et al., 2020). A literature review of synchronous online learning highlights several benefits of this approach. Firstly, it provides greater flexibility and accessibility for university students (Gopal et al., 2021; Hixon et al., 2016). Secondly, synchronous online learning can facilitate greater student engagement and interaction through online discussion and collaborative activities (Chiva-Bartoll & Fernández-Rio, 2022). Additionally, this approach can reduce educational barriers, such as geography and cost (Gonzalez et al., 2020).

Physical education major in higher education has been negatively influenced during COVID-19 due to the need for social distancing and reducing the risk of spreading the virus (Moustakas & Robrade, 2022). As a result, many universities have adopted hybrid or fully remote learning models to mitigate these risks, often involving online physical education courses (Chiva-Bartoll & Fernández-Rio, 2022; González-Calvo et al., 2022; Howley, 2022). In these online classes, university students can participate in physical activities that can be done at home, such as bodyweight exercises, yoga, and stretching (Chiva-Bartoll & Fernández-Rio, 2022). In addition, some institutions also implement virtual games that adhere to social distancing guidelines (Moustakas & Robrade, 2022). Therefore, synchronous online learning for physical education can provide students with opportunities to learn about physical activity, even if they can't participate in traditional in-person classes (Varea et al., 2022).

Although many studies have explored the importance of online education for university students, the previous literature has not successfully explored diverse majors for its effectiveness. Thus, this study recognized the importance of physical education students' online learning and filled the gap in the pre-existing literature. Specifically, this research focuses on Korean university students' satisfaction and evaluation with synchronous online learning using Zoom for physical education courses. The study implemented a mixed method, including an exit online course survey (n=60) and interviews (n=4).

2. Literature Review

A physical education major in higher education typically focuses on studying human movement, physical activity, health, etc. The curriculum typically includes courses in physiology, kinesiology, sports psychology, exercise science, pedagogy, and others (Chiva-Bartoll & Fernández-Rio, 2022). Students in this field can gain practical experience through internships or student teaching opportunities in physical education programs at schools (Varea et al., 2022). This major aims to prepare students to become physical education teachers, coaches, or professionals in related fields such as fitness and wellness, sports medicine, or recreation (Burhaein, 2022).

A literature review on physical education during COVID-19 finds that the pandemic has significantly impacted the delivery of physical education (González-Calvo et al., 2022; Moustakas & Robrade, 2022). For instance, in terms of a positive perspective, Lit et al. (2022) argued that students' overall evaluation supported the successful development and implementation of the online course. Specifically, most students fulfilled the learning tasks and were satisfied with the online learning resources. Also, students indicated high levels of autonomous motivation and engagement in online self-learning. Over half of the students responded to self-improvement in diverse aspects after attending the blended course. Konukman et al. (2022) examined students' opinions on online learning in another study. The authors found a positive impact of individual approach to student learning, greater student independence, and ongoing monitoring of student performances.

However, the literature review also shows the challenges physical education instructors and coaches have faced in adapting to remote or hybrid learning models, including the need to modify their teaching methods and the difficulty in effectively delivering physical education content online (Howley, 2022). In addition, previous studies have documented that the shift to remote learning has decreased physical activity levels for many university students and decreased opportunities for physical education classes and organized sports (Liu et al., 2022). This decrease in physical activity can negatively affect students' physical and mental health (Liu et al., 2022). For instance, Burhaein et al. (2022) argued about

various online learning problems. The authors concluded that online learning is not ideal because student learning outcomes were unsatisfactory. Burhaein (2022) also found student anxiety in physical education learning during the COVID-19 pandemic in Indonesia. The survey showed that about 50% of students showed learning anxiety in physical education students in online learning.

Based on the existing literature, it is important to note that the effectiveness of online education can be greatly influenced by factors such as the quality of instruction, the use of technology, and the level of student support provided (Zarei & Mohammadi, 2022). Studies on online education also suggest that it can be an effective form of education, but its success may depend on individual circumstances and implementation (Grynyuk et al., 2022). The trend towards online education in higher education is likely to continue, driven by advancements in technology, the increasing demand for flexible and accessible education options, and the ongoing COVID-19 pandemic, which has accelerated the shift to online learning (González-Calvo et al., 2022; Moustakas & Robrade, 2022). In this environment, it is critical to understand university students' evaluations and satisfaction with physical education courses via synchronous online Zoom courses in higher education programs. This study has the research question:

Research Question: How do Korean university students perceive online synchronous courses for their physical education courses?

3. Methodology

3.1 Study Participants

The current study was conducted at a private university in South Korea. Synchronous online education means the course instructor teaches courses using the Zoom platform in real class time. Among students who participated in the synchronous online courses, 60 physical education major students participated in the exit course survey at the end of the 2022 fall semester. Of the final survey participants, 41 identified as male and 19 as female, and most of the participants were sophomore and junior-year students. The students' majors focus on physical education. Most students earned a GPA of 3.5 or higher. Table 1 shows the information on survey participants.

Table 1. Demographic Data of Survey Participants

Category		Frequency (N=60)	Percent (%)
Gender	Male	41	68.3
	Female	19	31.7
Grade Level	Sophomore	25	41.7
	Junior	21	35.0
	Senior	14	23.3
GPA	2.0 – 2.5	5	8.3
	2.5 – 3.0	11	18.3
	3.0 – 3.5	11	18.3
	3.5 – 4.0	11	18.3
	more than 4.0	22	36.7

3.2 Data Collection and Data Analysis

Data were collected after the 2022 fall semester. Informed consent forms were collected before the exit survey. The survey for this research was modified based on previous studies (Almusharraf & Khahro, 2020; Aguilera-Hermida, 2020; Lee et al., 2021) to fit this research purpose and context. The survey implemented a 5-point Likert scale, ranging from (1) strongly disagree to (5) strongly agree, to measure the responder's agreement with statements related to satisfaction.

After the survey completion, the researchers recruited interview participants further to explore university students' experiences of synchronous online education. A total of 4 students voluntarily participated in the interview. The interview duration for each interview lasted about 30-40 minutes. Table 2 shows the information of interview participants.

Table 2. Interview Participants

Participant	Gender	Degrees / Majors	Academic years	The previous online course experience
Participant 1	Male	Physical Education	Junior	Yes
Participant 2	Male	Physical Education	Sophomore	Yes
Participant 3	Female	Physical Education	Junior	Yes
Participant 4	Female	Physical Education	Senior	Yes

4. Study Results

4.1 Survey Results

Table 3 shows the descriptive statistics for the survey. The results include perceptions, attitudes, and satisfaction toward synchronous online learning for physical education students. The survey results are as follows.

Table 3. Descriptive statistics of survey results

Category	Question	M	SD
Perceptions and attitudes towards online education	1. I actively participated in online learning.	4.18	.833
	2. I did pre-learning and post-learning about online classes.	3.52	1.157
	3. I participated in the online learning activities suggested by the instructor.	4.37	.843
	4. I actively expressed my opinion to the instructor.	3.83	1.011
	5. The syllabus (including the revised version) contains detailed information about online learning.	3.98	.983
	6. The instructor provided an appropriate evaluation method to confirm the achievement of learning goals.	4.10	.951
	7. The instructor suggested learning content considering the characteristics of online classes.	4.21	.885
	8. The instructor provided an effective online class teaching method to promote participation in learning.	4.20	.798
	9. The instructor's speaking speed, volume, and clarity suit the learners.	4.15	.917
	10. I always had access to the LMS.	4.30	.788
	11. The LMS for online classes was configured uniformly.	4.15	.917
	12. Online learning provides flexible learning.	4.22	.865
	13. LMS was created considering the accessibility of learners.	4.03	.961
	14. The interactions between learners and learners were made smoothly.	4.12	.958
	15. The interaction between the instructor and learner was smooth.	4.07	.900
	16. In an online class, the instructor provides accurate and prompt information to learners.	4.12	.846
Satisfaction with online education	1. Online learning was effective in achieving the course goal.	4.18	.911
	2. Learning through online classes was a valuable experience.	4.25	.876
	3. Learning through online learning was positive.	4.27	.841
	4. I will continue to take online classes next semester.	4.25	.932

First, university students' perceptions and attitudes toward the synchronous Zoom courses were positive overall. Specifically, the physical education students responded they participated in synchronous online classes actively (4.18±.833). Also, they reported participating in the online learning activities suggested by the instructor (4.37±.843). The students also reported the synchronous online courses were very systematic. Additionally, the students had high evaluations of the instructor; thus, they evaluated that the instructor provided content based on the characteristics

of online education (4.21±.885). In particular, university students evaluated the instructor provided an appropriate evaluation method to confirm the achievement of learning goals (4.10±.951). In addition, they provided an effective teaching method to promote participation during synchronous online learning (4.20±.798).

Second, the students responded that the synchronous online course was a consistent and flexible teaching method. The students showed that online education included explanations of learning methods (4.22±.865). In particular, they evaluated the synchronous online education that provided flexible learning (4.22±.865). Third, the physical education students reported active interaction could be achieved between instructor and learner (4.07±.900). University students also reported that synchronous online education has the advantage that instructors can provide accurate and prompt information to learners in real time (4.12±.846).

Fourth, physical education students had high satisfaction with synchronous online education and were willing to take these courses again next semester (4.25±.932). Furthermore, they evaluated synchronous online education as effective in achieving the course goal (4.18±.911). In addition, they reported that they were overall positive about learning (4.27±.841) and that online education was a valuable experience (4.25±.876).

4.2 Interview findings

Regarding interview data analysis, physical education students mentioned three Zoom class aspects: real-time interaction, accountability, and personalization. Firstly, synchronous online learning allows physical education students to interact with their course instructors and classmates in real time, providing immediate feedback and support during online courses. In addition, synchronous Zoom classes can be tailored to meet the specific needs of each student, allowing them to focus on their individual goals and interests. Here are positive responses from students' interviews.

> *I liked the Zoom class because we could interact with classmates in real time through Zoom meeting rooms. While doing collaborative activities, we can work together. Also, if we have questions, we can directly ask the instructors, and they can solve our inquiries and show the physical movement of demonstrations in real-time. Zoom is a good option during COVID-19 to replace in-person F2F classes (Student 1).*

In addition, with synchronous online learning, physical education students are held accountable for their learning participation and progress, which can help them stay motivated and engaged in their fitness routines. Students responded that they could focus the content effectively in Zoom class instead of distance education, which has no real-time interaction.

> *Although it is a Zoom class, the course instructors closely monitor our performances in various activities. For example, in asynchronous class, we may delay our tasks because no one checks our progress of tasks, but in Zoom synchronous class, we had to do our job in real-time. Therefore, this Zoom course makes us more responsible for our learning. Also, it makes us more engaged and motivated by the content. Therefore, Zoom is better than distance education courses (Student 3).*

However, few students mentioned the limitations of the Zoom course. For example, when they have an important competition for their awards, they like to have F2F coaching and feedback from instructors and coaches on-site. They also mentioned that sometimes it was difficult to follow the instructor's demonstrations at home via monitors and screens. Thus, they like to practice certain physical movements in the gym, working with instructors.

> *I like to go to the gym and practice my physical movements with my coaches. I can watch it on screen, but I need in-person, on-site feedback. So for me, the Zoom class has some limitations, and it cannot be the same as the F2F class (Student2).*

5. Discussion

This research focuses on university students' satisfaction and evaluations with synchronous online education for physical education at a Korean higher education. The study used a mixed-method approach, including exit course surveys (n=60) and interviews (n=4). Study results are followed. First, physical education major students' attitudes and perceptions of synchronous online education were positive overall. Specifically, they participated in synchronous online education actively. They also responded the course instructors suggested learning content considering the characteristics of synchronous online education. For instance, they evaluated the instructor provided an appropriate evaluation method to confirm the achievement of learning goals, and provided an effective online education teaching method to promote participation in learning in real-time. These results are consistent with previous studies of the benefits of synchronous online education. For example, it has been suggested that students' online learning satisfaction is heavily influenced by effective online teaching and learning strategies (Jeong, 2019; Lee et al., 2021; Saha et al., 2022).

Second, physical education students responded that synchronous online education was a consistent and flexible teaching method. They showed that synchronous online education included explanations of learning methods, and LMS provided guidance and inspection of learner progress. In particular, they evaluated that Zoom courses provided flexible learning. These results are consistent with previous studies. For instance, some studies have documented that synchronous online learning can provide greater access to education for students with barriers to traditional on-campus study, such as those living in rural or remote areas (Muthuprasad et al., 2021; Stewart & Lowenthal, 2021).

Thirdly, physical education major students were highly satisfied with synchronous online education and were willing to take these courses again next semester. They evaluated synchronous online learning as effective in achieving the course goal. They reported positivity about learning, and synchronous online learning was a valuable experience. The previous literature also highlights several benefits of this approach. For example, synchronous online learning can facilitate greater student engagement and interaction through discussion forums and other online tools (Burhaein et al., 2022; Saha et al., 2022).

Regarding interview data, physical education students mentioned three Zoom class aspects: real-time interaction, accountability, and personalization. Firstly, synchronous online learning allows university students to interact with their instructors and classmates in real time, providing immediate feedback and support during fitness activities. In addition, physical education students are held accountable for their learning participation and progress, which can help them stay motivated and engaged in their fitness routines during Zoom classes. Lastly, synchronous online learning can be tailored to meet the specific needs of each student, allowing them to focus on their individual fitness goals and interests.

These are consistent with previous studies that students favor real-time interaction with course instructors via Zoom for feedback and coaching purposes (Liu et al., 2022). This finding meant the instructor could provide personalized instruction for students who need help via Zoom meeting rooms. Furthermore, students feel accountable for their learning progress and participation because the instructor can monitor their progress in real-time activities (Saha et al., 2022; Varea et al., 2022).

However, students mentioned the limitations of the Zoom course during the interview. They like to take physical education courses in the gym with a F2F format to receive detailed feedback because Zoom screen feedback is not good enough for them to improve their performances at home. Thus, few students prefer to take courses on-site. The previous literature also supports this finding. Studies have shown the shift to remote learning has decreased physical activity levels for many university students and decreased opportunities for physical education classes and organized sports (Burhaein et al., 2022). This decrease in physical activity can negatively affect students' physical and mental health (Burhaein, 2022). Although university students' evaluations and satisfaction with Zoom courses were positive, a few limitations were found in students' interview data analysis.

6. Conclusions

Physical education major in higher education has been negatively impacted during COVID-19 due to the need for social distancing. Many universities have adopted hybrid or fully remote learning models to avoid these risks, often involving online physical education courses. Recognizing the importance of online education for physical education, this research focuses on Korean university students' satisfaction and evaluation with synchronous online learning using Zoom. The study implemented a mixed method, including exit course surveys (n=60) and individual interviews (n=4). The data was collected in the 2022 Fall semester. Study results showed synchronous online education provided a flexible learning environment for physical education students. Also, students were highly satisfied with synchronous online education and were willing to take these courses again next semester. Furthermore, they evaluated synchronous online education as effective due to several aspects, including real-time interaction between the instructor and students, personalized teaching by the instructors, and promoting students' accountability for learning participation and engagement.

7. Recommendations

Synchronous online education can benefit physical education students for several reasons. First, in terms of accessibility, synchronous Zoom classes can be accessed from anywhere, making it easier for these students to participate in physical education courses even if they cannot attend in-person classes due to physical limitations or other reasons. Second, concerning flexibility for synchronous online courses, physical education students can participate in activities at their own pace and schedule, making balancing their academic and personal commitments easier. Third, concerning feedback and monitoring, course instructors can provide real-time feedback and monitor university students' progress, which can help them identify areas for improvement and adjust their fitness routines. Finally, synchronous online education can provide a social outlet for students to connect with their peers and engage in group activities. As a result, Zoom classes can be a valuable tool for physical education students to improve their fitness, enhance their overall health and well-being, and connect with their peers in a virtual setting. Thus, the course instructors should decide which method suits their students best.

8. Limitations

Although the findings of this study are valuable to understanding university students' synchronous online education for physical education, the data was collected and analyzed in a specific context. Therefore, this study's results might differ from the different institutions with diverse student populations and majors. Thus, future studies should explore a more diverse context and a large student. Further, the student sampling in this study was selected based on a convenience sampling of accessible students to participate in the study. Therefore, a random approach in a broader context could add significance to future research.

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