The Global Experiences of Physical Education Teachers with Remote Instruction During the Covid-19 Pandemic

A Synthesis Project

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Abstract

In the spring of 2020, countries around the world were forced to go into lockdown due to the Covid-19 pandemic. Schools were forced to close their doors and quickly shift from face to face to online instruction at all levels of education. Physical education teachers had to immediately transition from in-person classroom instruction to remote teaching without time for adequate planning and with little or no training. The purpose of this synthesis is to review the literature on the global experiences of physical education teachers with remote instruction during the Covid-19 pandemic.
Chapter 1 - Introduction

In March 2020, Covid-19 forced countries around the world to go into a lockdown. The World Health Organization declared the Covid-19 outbreak a global pandemic as it spread across 100 countries and territories around the world (Verma, 2020). By April 2020, at least 42 states and Washington, D.C., enacted policies to close all non-essential businesses, schools, cultural and sporting events in the United States in order to slow the spread of this disease (Moreland, 2020). The rapid spread of this disease affected all aspects of society worldwide. The pandemic caused human suffering, death, mental health issues, social distancing, shortages of products, business closures, and changes in how we learn and work. It has impacted more than 94% of the world’s student population affecting nearly 1.6 billion learners in more than 200 countries (Pokhrel, 2021). Throughout this nation, school closures interrupted traditional schooling for all public and private K-12 students affecting more than 50 million students (Zviedrite et al., 2021).

The pandemic prompted an emergency transition from traditional to distance learning at all levels of education, called emergency remote teaching (Hodges et al., 2020). Teachers had to immediately change from in-person classroom instruction to remote teaching without time for adequate planning (Seabra et al., 2021). Physical education teachers had to find ways to quickly adapt their planned traditional teaching methods to online instruction with little or no training. This was especially challenging because physical education content required a large space and in-class grouping that encouraged socialization among pupils (Richards et al., 2020). The global experiences of physical education teachers during school closures provided insight into the transition to emergency remote teaching.

Statement of the Problem
As previously stated, Covid-19 prompted emergency remote teaching at all levels of education (Hodges et al., 2020). Physical educators had to quickly adapt to a new way of teaching physical education during the nation-wide lockdown without time for adequate planning (Seabra et al., 2021). They had to overcome obstacles and find ways to deliver quality physical education to their students using remote instruction.

**Purpose of the Study**

The purpose of this synthesis is to review the literature on the global experiences of physical education teachers with remote instruction during the Covid-19 pandemic.

**Operational Definitions**

1. Traditional schooling – in person classroom instruction
2. Teachers’ experience – their perception, attitude
3. Remote learning/instruction – distance learning/instruction, online learning/instruction

**Research Questions**

1. What were the experiences of physical education teachers as they adapted to remote instruction during school closures?
2. How can physical educators be better prepared for remote instruction in another emergency?

**Delimitations**

1. The articles used in this synthesis were both peer reviewed and full text.
2. The articles reviewed were published between 2019 – 2023.
3. Peer reviewed scholarly articles focused on physical education teachers’ experiences/perceptions during Covid-19 pandemic with remote teaching.
Chapter 2 – Methods and Procedures

The purpose of this chapter is to review the methods and procedures used to determine the experiences of physical education teachers with remote instruction during the Covid-19 pandemic. The studies collected for this synthesis were located using the EBSCO database from The SUNY Brockport’s Drake Library. Within the EBSCO database the following databases were searched: Academic Search Complete and SPORTDiscus, ERIC, Google Scholar, and KSSPE Library Search. A combined search of the databases produced thousands of articles.

Keywords were used in the search in order to reduce the number of articles. These keywords included physical education, physical education teachers, Covid-19 and remote teaching. Physical education and Covid-19 were the two most important search words to begin the research process. Additional keywords physical education teachers and remote teaching were used to narrow the search further.

The first search conducted was in the Academic Search Complete and SPORTDiscus databases. The keywords used were physical education and Covid-19. This search resulted in 4,976 hits. To reduce the results, physical education teachers and Covid-19 were applied. This resulted in 717 articles. To further reduce the number of articles, physical education teachers and Covid-19 and remote teaching were added. This search returned 80 results. Additional filters were added. Results were limited to full-text, and peer reviewed articles published between 2019-2023. The results were reduced to 35 articles and 4 were used for this synthesis.

A second search was in the ERIC database. The same filters were applied: full-text and peer reviewed articles published between 2019-2023. The keywords were physical education teachers and Covid-19 and remote teaching. The search resulted in 27 articles and 2 were used for this synthesis.
The third search was in Google Scholar. The same filters were applied: full-text and peer reviewed articles published between 2019-2023. The keywords were “physical education teachers” during Covid-19 “remote teaching”. This resulted in 455 hits. To decrease the number of articles, the keywords “physical education teachers” during Covid-19 “remote teaching” experiences were applied. This produced 391 results. To further reduce this number, keywords were rearranged to read “physical education teachers’ experiences” during Covid-19 “remote teaching”. The articles were reduced to 53 and 3 were used for this synthesis.

The fourth search was done through the KSSPE Library Search database. The keywords were physical education teachers and Covid-19 or pandemic which produced 1,328 hits. The search continued with the following filters: peer-reviewed journals, available online, 2019-2023, and expand search results beyond Drake Library. “Physical education teachers” and Covid-19 or pandemic resulted in 179 hits. To further reduce this search, the keywords “physical education teachers” and Covid-19 and remote were applied and produced 30 articles and 2 were used for this synthesis.

Eleven articles were selected through the search process. They were selected based on the appropriateness to the topic. The articles had to relate to physical education teachers, Covid-19 or coronavirus or pandemic, and remote teaching. Seven additional articles were used for background information in Chapter 1.

The articles selected were from the following journals: Journal of Teaching in Physical Education (3 articles), Journal of Healthy Eating and Active Living (1 article), The physical Educator (1 article), Journal of School Health (1 article), International Education Studies (1 article), Journal of Physical Education and Sport (1 article), Journal of Online Learning
The critical mass for this synthesis consisted of 9,197 general physical education teachers. They taught elementary, middle, and secondary grades in public schools. Data was collected in the United States as well as in Korea, Turkey, and Spain. Studies in this synthesis were conducted using both qualitative and quantitative approaches. Individual and group interviews, semi-structured interviews, questionnaires, online surveys, multiple choice questions, and Likert scales were used to gather data. The following methods were used to analyze the data: inductive and deductive, open, axial, core, and selective coding, descriptive statistics, content analysis, Atlas Ti, constant comparison, chi-square, binary logistic regressions, collaborative data analysis, SPSS version 26, and thematic analysis.
Chapter 3 – Review of Literature

The purpose of this chapter is to present a review of literature on the global experiences of physical education teachers with remote instruction during the initial phase of the Covid-19 pandemic. In March 2020, the pandemic caused disruptions to everyday life around the world including schooling. Governments closed schools, face-to-face instruction ended, and teachers transitioned to emergency remote instruction. Hodges et al. (2020) described emergency remote teaching as “a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances”. It is not the same as regular online instruction that is well planned and designed to be an online course. Emergency remote instruction was an involuntary shift of instruction due to an emergency. Physical education teachers had to drastically change how they delivered instruction and they found aspects of teaching more challenging during remote instruction. Their experiences from the initial transition in March 2020 from teaching face-to-face to teaching from home were analyzed. The following occurring themes will be reviewed: Lack of teacher support, inequality, lack of student accountability, need for professional development, positive outcomes, and how physical educators can be better prepared for future emergencies.

Lack of Teacher Support

When school buildings closed due to the pandemic, teachers had to adapt to unexpected teaching conditions. Physical education teachers indicated a need for clarity and guidance from their supervisors but they did not get clear direction from their administrators who were also trying to figure out what to do and how to do it. Simonton et al. (2022) sampled 10 certified physical education (PE) teachers, who taught in the Southeastern part of the United States, over a period of six months. Five were men and five women. The purpose of this study was to understand their day-to-day experiences from the lens of teaching during a pandemic. Data
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collection included a pre/post semester semi-structured interview and ongoing critical incidence reports. Critical incidence reports contained notes describing any situation that the participants felt their physical education program, teaching, or students were impacted positively or negatively over the semester as it related to teaching during Covid-19. Interview data were collected using phone/online video conferencing software. Teachers were asked to participate in two 30–45-minute sessions. The interviews targeted teachers’ emotions and asked, “How have you felt while teaching and what has caused you to feel that way?” All interview transcripts and critical incident forms were analyzed using both inductive and deductive techniques. Simonton et al. (2022) reported that most PE teachers could not understand how physical education could be taught or learned virtually, and that minimal administrative support made teachers feel helpless as they did not know what to teach.

In a similar study, Lopez-Fernandez et al. (2023) interviewed 12 Spanish (11 men and one woman) public school secondary physical education teachers in Spain. Their purpose was to explore the reality from several PE teachers’ perspectives and to reflect on the type of physical education that the global pandemic influenced. The online semi-structured interviews involved groups of two to four teachers for approximately 63 minutes. The interviews were recorded and transcribed. Data analysis used inductive and deductive approaches. The findings indicated that teachers were forced to teach online and to quickly acquire training not only in digital technology but also in teaching content that was not familiar to them. They reported that the training seemed ineffective.

In addition, Centeio et al. (2021) investigated PE teachers’ perceptions of implementing PE during the Covid-19 pandemic as well as to explore their needs with regard to support for future teaching experiences. Physical education teachers (4,302) from 50 states in the United
States participated in a study that consisted of multiple choice and four open-ended questions. The open-ended questions focused on teachers’ successes, barriers, personal development, and concerns. The survey was designed using Google forms and distributed online. Qualitative and quantitative analysis, collaborative data analysis, and inductive and deductive coding were used. Results of the study showed many educators felt unprepared and unsupported since there was a lack of clear school, district, and state-level policies specific to physical education.

Similarly, a study by Johnson et al. (2021) expressed the frustration that physical education teachers had with remote teaching. An online open-ended questionnaire was sent to 215 physical education teachers in California, New Mexico, and Texas. The two open-ended questions allowed the teachers to respond to the types of support they received during the transition to remote teaching and their concerns. Qualitative data using the constant comparative method was used to analyze data inductively as well as open and axial coding methods. The results revealed that teachers made it clear they were unhappy and frustrated with how distance learning was handled at state and district levels. There was a lack of clear, consistent communication from the people in charge (Johnson et al., 2021).

Kuhn et al. (2022) also reported in their study the lack of teacher support during school closures. An electronic survey was sent via email to 134 public school physical education teachers representing 26 states. Responses were on a five-point Likert-type scale. Descriptive analysis, binary logistic regression, and SPSS version 26 were used for analysis. Results showed that prior to the pandemic, physical educators had external supports such as equipment, funding, school and district leadership, and policies. However, physical education supports declined substantially in the Spring of 2020 during school closures.

Inequality
As schools shifted to an online format, many students struggled not just academically but because they lacked either access to the internet or to suitable devices for online instruction. Physical educators worldwide expressed their concern about their students not having access to technology because high-speed internet was essential to deliver online physical education. Students from lower-income families and rural areas either lacked devices or had limited or no access to an internet connection. When schools closed due to the pandemic, 20.8% of low-income households in the United States with school-aged children did not have a high-speed internet connection (Lai & Widmar, 2021). Disparities also existed between the types of devices and software that were used in students’ homes. Students from low-income households were likely to access the internet from a smartphone than from a computer and this limited them in an online learning environment because they could not access all the necessary features.

Kaya (2021) conducted a study in Turkey in order to examine the opinions of physical education teachers about the remote education of schools due to the Covid-19 pandemic, and the remote teaching of physical education lessons. The opinions of physical education teachers about the remote process, the problems they encountered, and the advantages and disadvantages of the process were studied. Data were collected face-to-face from 20 physical education teachers, 8 females and 12 males. The interview consisted of four questions which were recorded using a tape recorder. Descriptive and content analysis methods were used to analyze the data. The findings revealed that teachers were concerned with issues of equity. Distance education did not provide equal opportunities for every student, and students living in rural areas appeared to be more disadvantaged. Every student did not have a computer or internet access to continue their online education, and this situation created inequalities in educational opportunities. Similarly, Johnson et al. (2021) reported that there is a digital divide in America since some students did
not have access to devices and high-speed internet at home. Although school districts provided laptops and tablets and mobile hotspots for students who needed devices and internet access, students were having difficulty accessing videos. Centeio et al. (2021) stated that only 40% of students had access to technology/internet and physical education teachers struggled with communicating with students that did not have technology.

Similar results were found in a study conducted by Vilchez et al. (2020). The purpose of the study was to characterize public school physical education teachers’ perspectives on physical education via distance learning during the Covid-19 pandemic. Semi-structured interviews were conducted via video conferencing lasting 30 – 60 minutes with 15 physical education teachers in California. The interviews were audio recorded and notes were taken to document nonverbal communication. The findings agreed with Kaya (2021), Johnson et al. (2021), and Centeio et al. (2021) that remote learning highlighted inequalities since some students did not have access to resources such as a computer, internet access, and hardware/software devices.

Lack of Student Accountability

A common concern of physical education teachers was that many students did not participate, and they found it nearly impossible to hold students accountable for incomplete assignments or non-participation. In a study by Foye and Grenier (2021), 15 physical education teachers (11 males, 4 females) from three different New England states participated in the study. They were elementary and secondary PE teachers. Data were collected through semi-structured interviews which lasted between 50 – 60 minutes. Each participant was interviewed once over Zoom videoconferencing software. Data analysis was performed using thematic analysis, open coding, axial coding, and selective coding. A lack of student accountability was perceived to be the biggest obstacle to success in online physical education. Teachers were frustrated regarding
the number of students who did not participate in online PE and attributed this to a vague message from administrators that participation in PE was optional. Teachers expected students to participate but indicated that there were no consequences for students who did not attend online classes. Eventually, a district level decision was made that everyone should receive a passing grade.

Similarly, Kim et al. (2021) reported that PE teachers were told by their principals that formal assessments were not mandatory for art, music, and physical education and the district was not giving grades. As a result, it was difficult for PE teachers to hold students accountable and this caused a lack of student participation and a high rate of absenteeism in their classes. Likewise, Kuhn et al. (2022) adds support to the studies of Foye and Grenier (2021) and Kim et al. (2021) by reporting that pre-pandemic 2019–early 2020, PE teachers estimated an average attendance of 94%. During the Spring of 2020, the estimated average attendance was 38% which is in line with national data.

In the study by Centeio et al. (2021) a significant number of physical education teachers expressed concern over the lack of participation and accountability of students. Teachers were assigning work but the response rate from students was low. It was hard to hold the students accountable because there was no enforcement policy. Once the administration said it wasn’t going to grade PE, participation quickly decreased and it was impossible to hold students accountable for completing any of the work or participating in the lessons.

**Need for Professional Development**

Physical education teachers faced an unfamiliar environment with the transition to emergency remote teaching. During the almost overnight switch to remote instruction resulting from the Covid-19 pandemic, teachers used trial and error methods in providing remote
instruction (Jeong & So, 2020). Physical educators expressed the need for professional development that is specific for online physical education. Mercier et al. (2021) conducted a study of 4,362 physical education teachers who taught in the Northeast, Midwest, Southern, and Western regions of the United States. The purpose of the study was to understand PE teachers’ experiences with remote instruction in physical education during the initial outbreak of the Covid-19 pandemic. A link to the survey was distributed using Google Forms. Response options included Likert-type scales, multiple choice, yes/no, and open-ended responses. Both qualitative and quantitative analysis were used. The findings indicated that continued support for physical education teachers through professional development sessions is needed to become more effective remote instructors and to help them deliver quality remote physical education instruction. Johnson et al. (2021) stated that physical educators must have meaningful professional development to advance as educators and to meet the specific needs of their online students.

In a Korean study by Jeong and So (2020), six middle and high school physical education teachers were selected. The purpose of the study was to identify the difficulties of middle and high school online physical education classes due to the pandemic and suggest ways to efficiently manage future online physical education classes in Korea. Online videos of their physical education classes, individual and group interviews, and participants’ journals were examined. Inductive analysis was used focusing on open coding, axial coding, and core coding. The findings were similar to those from the United States. Physical educators from Korea experienced considerable confusion in their initial attempts at online instruction. Teachers were unprepared and struggled with an unfamiliar teaching method. The physical educators expressed
a need for additional training with online experts on how to integrate computers into their physical education instruction.

Similar results were found in a study conducted by Kim et al. (2021) where four male and four female certified physical education instructors from different regions of the United States were interviewed and audio recorded over the telephone using a semi-structured format for 45 to 55 minutes. These interviews were transcribed verbatim. The purpose of this study was to examine PE teachers’ experiences and perceptions of online teaching during the Covid-19 pandemic when they went from face-to-face physical education to online teaching. Data were analyzed using open, axial, and selective coding. The findings of this study showed that the teachers expressed the need for professional development with technology. Although some PE teachers had some knowledge of technology, there was a gap between knowing technology and applying it to online teaching (Kim et al. 2021). It was difficult for them to alter the physical education content that they have taught face-to-face and apply it to online teaching. The lack of technological experiences and knowledge demonstrated their need for professional development in this area.

Kaya (2021) also reported how the physical education teachers in Turkey felt inadequate in front of their students when face-to-face physical education was switched to online teaching. They reported feeling foreign to this situation, desperate, and they did not know what to do because they were inexperienced. The physical educators stated that professional development related to technology was needed to overcome these problems.

**Positive Outcomes**

Few studies from the critical mass reported positive experiences for physical education teachers with remote teaching but overcoming and learning technology was listed as one of their
biggest successes during the Covid-19 pandemic. This online teaching experience forced physical educators to develop technological skills. The pandemic forced physical educators to learn remotely and use technology in their lessons (Kaya, 2021). Teachers reported that being able to transition to a digital learning environment, and to go from face-to-face teaching, and switching with little preparation, has been their success (Centeio et al., 2021). Teachers were required to learn platforms such as Zoom, Google Classroom, and YouTube to connect with their students. Vilchez et al. (2020) reported that online delivery of physical education forced teachers to integrate technology into their teaching and many educators reported that they would like to use technology in the future.

A second success for physical education teachers during emergency remote teaching was cooperation. The start of the Covid-19 pandemic forced PE teachers to leave their comfort zone and search for alternative ways to present their lessons. Since there was no formal training, they had to find ways to deliver meaningful remote physical education. Due to the pandemic, a sense of community emerged and teachers who did not know one another started sharing teaching resources, units of learning, and teaching ideas (Lopez-Fernandez et al., 2023). In Spain, support groups were created for physical education teachers so that they could exchange resources. Physical education teachers came together, their connections to other colleagues improved, and they were much more generous when it came to sharing their work and their own ideas. This was an opportunity to strengthen a lost sense of community among physical education teachers (Lopez-Fernandez et al., 2023). In Turkey, Kaya (2021) reported that the physical education community provided training and help to teachers who had difficulty creating content in the early stage of online classes. To overcome limited online teaching content, physical education teachers
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worked together with their colleagues daily. They got together and shared ideas by figuring out things that went well, what went wrong, and fixing it. (Kim et al., 2021).

Preparation for Future Emergencies

In the Spring of 2020, school districts across the United States as well as world-wide were forced to quickly shift to an online teaching format. Data indicated that physical education teachers were unprepared for this switch and needed assistance. Those who received assistance in the form of professional development during the school closures criticized the training they received because it was geared toward classroom teachers (Johnson et al., 2021). What they needed was professional development that was specifically designed for physical educators.

Understanding what physical education teachers experienced during the Covid-19 pandemic is important so that teachers can provide the best PE environment for all students if faced with this situation again (Centeio et al., 2021).

To be better prepared for another school lockdown, ongoing professional development for physical educators is necessary to help them align an online curriculum with standards and to create engaging lessons that encourage active student participation (Johnson et al., 2021). In a study conducted by Kuhn et al. (2022) it was reported that physical education teachers should be offered more professional development for remote teaching so that they are better able to adapt to the changes in program delivery which will improve the amount of physical activity opportunities provided to students. Likewise, Vilchez et al. (2020) reported that physical educators discussed the need for training to learn how to creatively rework their lessons to meet the state’s standards when teaching remotely. The importance of continuing professional development for PE teachers is also reported in the study by Kim et al. (2021). Due to the lack of technological experiences and knowledge, it is recommended that more professional
development or seminars be available for PE teachers to enhance technological ability. They also reported that continued collaborative work between physical education teachers can be a significant factor in improving online teaching. Similarly, Vilchez et. al (2021) suggested educators connect with teachers via online platforms created by their school districts and to utilize social media platforms to connect with educators outside their network. In addition, they suggested that leading organizations for physical education including the Society of Health and Physical Educators (SHAPE) America and the California Association for Health, Physical Education, Recreation and Dance (CAPHERD) set standards for the physical education curriculum, provide guidance for virtual instruction and assessment, and offer professional development tools to educators. Kaya (2021) expressed that additional training for physical education teachers is important to adapt and design new instructional online activities and reduce the anxiety experienced by teachers. Hodges et al. (2020) reported that the most important suggestion made by physical education teachers was for schools to regularly incorporate digital learning days into the school year to help them prepare for any sudden change to remote instruction. If technology is used at home during the school year, it would not be new to students and teachers during emergency situations.

Another recommendation to be better prepared for a school closing deals with teacher preparation programs. Teacher education programs should be examined to better prepare physical education teacher education (PETE) students to successfully use digital technologies (Mercier et al., 2021). Programs should be revamped to improve the digital literacy of future educators. Foye and Grenier (2021) recommended that PETE programs closely examine the curriculum with the goal to better prepare students for the potential of teaching in an online environment. Likewise, Kuhn et al. (2022) stated the need for physical education teacher
preparation programs to reflect the current educational technology used in schools, so teachers arrive confident and experienced with remote teaching. Webster et al. (2021) reported that teacher preparation programs must now incorporate learning experiences that focus on using various videoconferencing platforms (Microsoft Teams, Blackboard Collaborate, Zoom, and Webex) and on various digital devices (desktops, laptops, tablets, and smartphones). Becoming proficient with these digital tools for online physical education is imperative.

**Summary**

Research has shown that physical education teachers found emergency remote teaching more challenging than face-to-face instruction. School closings are likely to happen again and physical educators must feel comfortable teaching face-to-face as well as remotely. It is important to understand their experiences during the initial school closures and listen to their recommendations so that physical educators would be better prepared for another crisis.
Chapter 4 – Discussion, Conclusion, and Recommendations

The purpose of this chapter is to present the results of the review of literature on the global experiences of physical education teachers with remote instruction during the Covid-19 pandemic and how these results align with the purported research questions which guided this synthesis project. In addition, recommendations for future research as it relates to the experiences of physical educators are presented.

The results of this review of literature revealed a few common themes. The research consistently indicated that physical education teachers found the shift to remote teaching frustrating during the initial school closures. They were unprepared and needed support to transfer face-to-face teaching to online instruction. A second theme mentioned was inequality. Every student did not have access to the necessary and updated technological devices and to an internet connection. Without these devices, physical educators could not meet the needs of all their students. The lack of student resources led to a third theme, lack of student accountability. It was impossible for teachers to hold students accountable for non-attendance, non-participation, and incomplete assignments. A fourth theme consistently emerged throughout the research indicating that physical educators lacked technological experience and training, and that professional development in this area was crucial.

Although most literature in this study reported the negative experiences of physical education teachers during Covid-19, there were some successes. The pandemic forced teachers to develop technological skills, and it created a supportive community among physical educators.

Discussion

Interpretations
As part of this literature review, two research questions were posed. The first research question was, what were the experiences of physical education teachers as they adapted to remote instruction during school closures? The results of the literature review showed that physical education teachers faced an abnormal environment with the sudden switch to emergency remote teaching. It was a stressful time for them because they had to provide quality physical education to their students using an unfamiliar platform.

The participants in this literature review expressed unfavorable experiences regarding online teaching during the Covid-19 pandemic. They needed assistance but did not have the administrative support commonly available to them. Simonton et al. (2022) reported that physical educators received superficial and not tangible support. Lopez-Fernandez et al. (2023) stated that the support the physical educators received was, in general, ineffective. According to Kuhn et al. (2022) the presence of external supports for teachers existed prior to the pandemic but there was a lack of these supports during the pandemic.

Another concern of physical education teachers was issues of equity. As schools changed from face-to-face instruction to an online format, inequality became obvious. Kaya (2021) stated that distance learning does not provide equal opportunities for every student. Students from lower-income families either lacked or had limited access to an internet connection (Centeio et al. 2021). Students required access to the internet and a suitable device in order to participate remotely and some students did not have access to devices and high-speed internet at home (Johnson et al. 2021).

Holding students accountable for learning was a challenge physical educators faced with the online environment. Foye and Grenier (2021) reported that the biggest obstacle to success in
online physical education was student accountability, and in the spring of 2020, a substantial decline in student attendance and participation was reported by Kuhn et al. (2022).

Many participants in this literature review were faced with challenges because they had limited or no online training and expressed the need for professional development. Mercier et al. (2021) indicated that PE teachers felt unprepared and desired assistance in learning about best practices for delivering remote instruction. Kim et al. (2021) reported that despite the participants’ knowledge of physical education, it was difficult for them to alter the content that they have taught face-to-face for online teaching. The sudden change to online classes left teachers unprepared and struggling with unfamiliar teaching methods (Jeong and So, 2020). The participants in the study by Vilchez et al. (2021) indicated a need for professional development in technology training to increase their comfort with technology platforms.

The Covid-19 pandemic brought about sudden changes that were challenging for physical education teachers but there were positive outcomes that were also reported. Lopez-Fernandez et al. (2023) reported that a sense of community emerged and teachers that you didn’t even know started sharing ideas and resources. Kaya (2021), Centeio et al. (2021) and Vilchez et al. (2020) all reported that the online experience forced physical educators to develop technological skills, improve online teaching skills, and provided an opportunity for them to be better PE teachers.

The second research question was, how can physical education teachers be better prepared for remote instruction in another emergency? The results of this literature review highlighted the importance of professional training for remote teaching so that physical educators are better prepared to adapt to changes in the way physical education is delivered. Vilchez et al. (2021) reported that educators expressed a need for professional development that focuses on technology platforms and virtual teaching. To be better prepared, ongoing professional
development for physical educators is necessary to help them gain digital skills and to learn how to meet the state’s curriculum standards in a remote environment. The need for understanding the role of technology in an online environment was at the top of teachers’ minds (Centeio et. al. 2021), and physical education teachers want professional development geared towards them so they can be ready to successfully connect with their students remotely during another shutdown.

In addition to ongoing professional development, participants in this literature review recognized the need for teacher preparation programs to expand the curriculum and address the skills, methods and techniques needed for online PE teaching. Foye and Grenier (2021) recommended that physical education teacher education programs examine the curriculum to better prepare students for the possibility of having to teach online. Future teachers would then be able to provide continuity of learning for online students, and the stress of transitioning to emergency remote teaching would be reduced for both student and teacher.

Implications

Research on the experiences of physical education teachers during the Covid-19 pandemic is still evolving. Since the initial closing of schools in 2020, there have been few studies and a lack of literature in this area. However, the findings of the literature review for this synthesis agree that there will likely be future public health emergencies and natural disasters and this will create the need for online physical education. The results provided support for the importance of providing physical educators training in technology and virtual platforms so physical education teachers can make the transition from traditional to remote instruction effectively when emergency remote teaching is required. The literature also indicated that physical education teacher education programs should include in their curriculum how to teach
PE effectively in an online setting. The goal would be to better prepare potential physical education teachers for distance instruction in a likely emergency.

**Recommendations for Future Research**

In reviewing the data base on the global experiences of physical education teachers with remote instruction during the Covid-19 pandemic the following limitations were noted regarding the studies under review. The pandemic related shutdown started in March and questionnaires were distributed rapidly so it would reach teachers before they left for their summer breaks which occurred the end of May in some states. It was likely that many teachers did not respond due to the difficulties of teaching online during a pandemic. Another limitation was that the studies were limited to physical educators working in public schools. These findings may not be generalizable to other education systems. Also, higher education teachers were not recruited in these studies. Their experiences of online teaching may be different from elementary, middle, and high school physical ed teachers. In one study, data were collected from participants in three states. A second study collected data from PE teachers working in New England states. Both of these studies were limited because regional data samples cannot be generalized.

Based on these limitations and other insights related to the literature the following recommendations for future research should be considered:

1. With time to prepare during the summer, physical education teachers might have different responses to the questionnaires that were distributed at the onset of the pandemic. A follow-up study to see how teachers’ experiences changed with more preparation for remote instruction would be beneficial for future PE instruction.

2. In order to make the findings more generalizable, future studies should collect data from physical education teachers who work in non-public schools, from those working in
higher institutions, as well as teachers with varying teaching ability, experience, and
diverse school populations.

3. Future studies should collect data from teachers in other regions of the United States as
well as globally since the results might differ. Studies comparing and analyzing different
countries’ experiences can aid in providing effective online physical education classes.

4. Future studies should focus on the development of best practices for remote learning in
physical education to help teachers deliver effective remote PE instruction when required.

**Summary**

The purpose of this literature review was to determine the global experiences of physical
education teachers with remote instruction during the Covid-19 pandemic. Delimiting
variables were used to do an exhaustive data-based search which yielded 11 articles. These
articles were then systematically used to determine the global experiences of physical
education teachers with remote instruction during the Covid-19 pandemic. Research revealed
the transition to online physical education both in the United States and overseas during the
Covid-19 pandemic was challenging for many PE teachers. This was primarily due to a lack
of digital experience, teacher support, student access to the internet using updated devices,
student accountability, and professional development in instructional technology specific to
physical education. Although most participants reported unfavorable online experiences,
there were some successes. Overcoming and learning technology was their greatest success
and a sense of community emerged as physical education teachers shared resources and
teaching ideas. By examining the research on what did or didn’t work during the pandemic, a
smoother transition to remote instruction can occur in a likely future emergency.
References


Jeong, H. C., & So, W. Y. (2020). Difficulties of online physical education classes in middle and high school and an efficient operation plan to address them. *International Journal of Environmental Research and Public Health, 17*(19), 7279-7291. [https://doi.org/10.3390/ijerph17197279](https://doi.org/10.3390/ijerph17197279)


https://doi.org/10.1123/jtpe.2020-0182

http://dx.doi.org.brockport.idm.oclc.org/10.1371/journal.pone.0248925
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<th>Author</th>
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<th>APPENDIX Purpose</th>
<th>A - ARTICLE Methods &amp; Procedures</th>
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<tr>
<td>Kelly L. Simonton, Todd E. Layne, Boone Brown, Keith Loupe</td>
<td>Physical Education Teacher Experiences Through the Lens of a Pandemic: Putting a Spotlight on Teacher Beliefs, Practices, Emotional Fragility, and Well-Being</td>
<td>Journal of Teaching in Physical Education</td>
<td>To highlight and understand teachers’ emotions via their teaching beliefs, goals, and day-to-day experiences during a national public health pandemic</td>
<td>Data collection from 10 PE teachers took place over a 6-month period Pre/post semi structured interview and critical incidence reports were reviewed. Data was collected via recorded phone/online video conferencing software.</td>
<td>Inductive and deductive techniques Line by line open and axial coding Constant comparison method</td>
<td>Most teachers appraised support as superficial and not tangible. They felt helpless when planning for curricular changes. Quality student-teacher interactions were lacking. PE teachers were emotionally overwhelmed.</td>
<td>Curricular changes should be communicated in a timely manner and personal development training should be provided. Emphasis is needed in research and training to create strong professional identity beliefs as a PE teacher; skills to navigate the realities of schools, including resiliency, persistence, and advocacy, are needed to maximize teachers’ effectiveness and well-being in schools. Future studies should include teachers with varying teaching ability, experience, and diverse school population.</td>
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<td>Josiah Johnson, David Daum, Jason Norris</td>
<td>I Need Help! Physical Educators Transition to Distance Learning During COVID-19</td>
<td>The Physical Educator</td>
<td>To find out the concerns Physical Education teachers had regarding distance learning and the types of support they need.</td>
<td>An online open-ended questionnaire was sent to Physical Education teachers in California, New Mexico, and Texas. The questions allowed the teachers to respond to the types of support they received during the transition to remote teaching and their concerns.</td>
<td>Qualitative data was analyzed inductively using the constant comparative method. Open and axial coding was also incorporated.</td>
<td>Professional development is needed related to online physical education. Teachers struggled with content to teach. There was a lack of clear, consistent communication and a lack of resources for students. Some did not have access to devices and high-speed internet.</td>
<td>PE-specific professional development in the use of instructional technology should be expanded. Future studies should focus on the development of best practices for distance learning in PE.</td>
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<td>Jocelyn A. Vilchez, John Kruse, Maryjane Puffer, Rebecca N Dudovitz</td>
<td>Teachers and School Health Leaders’ Perspectives on Distance Learning Physical Education During the COVID-19 Pandemic</td>
<td>Journal of School Health</td>
<td>To characterize public school physical education teachers’ and school health experts’ perspectives on physical education via distance learning during the COVID-19 pandemic</td>
<td>Semi-structured interviews were conducted via video conferencing lasting 30-60 minutes with 15 physical education teachers in California. The interviews were audio recorded. Notes were taken to document nonverbal communication.</td>
<td>Audio files were transcribed and reviewed for accuracy. Transcripts were coded in Atlas.Ti, a qualitative data analysis program. Open coding was also used.</td>
<td>Remote learning highlighted inequalities in access to resources. There is a need to rethink delivery of physical education remotely to meet state’s standards. Professional development is needed in virtual teaching.</td>
<td>Support for online physical education is a collaborative effort. Challenges were related to re-designing lesson plans, technology, maintaining student engagement, and providing equitable access to education. Participants developed successful strategies for building an online learning environment. Teachers were frustrated with policies that removed requirements related to physical education time, attendance, and grading.</td>
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<td>Minhyun Kim, Hyeonho Yu, Chan Woong Park, Taemin Ha, Jun-Hyung Baek</td>
<td>Physical education teachers’ online teaching experiences and perceptions during the COVID-19 pandemic.</td>
<td>Journal of Physical Education and Sport</td>
<td>To examine physical education teachers’ perceptions and experiences with online teaching during the COVID-19 Pandemic</td>
<td>Four male and four female certified PE teachers were interviewed, and audio recorded over the telephone using a semi-structure format for 45 to 55 minutes. Interviews were transcribed verbatim.</td>
<td>Open, axial, and selective coding was used for analysis.</td>
<td>Teachers lacked technological experiences and need professional development. Participants acknowledged some benefits. Their main goal was to engage students in physical activity. PE is not valued.</td>
<td>Initial feelings about online teaching were negative due to lack of technological experiences and knowledge. Teachers observed increased participation from students who described as “unskilled” or afraid to perform in front of others. School administrators are not likely to advocate for PE. Physical education was not required during their online teaching period.</td>
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<td>Kevin Mercier, Erin Centeio, Alex Garn, Heather Erwin, Risto Marttinen, and John Foley</td>
<td>Physical Education Teachers’ Experiences with Remote Instruction During the Initial Phase of the COVID-19 Pandemic</td>
<td>Journal of Teaching in Physical Education</td>
<td>To understand PE teachers’ experiences with remote instruction in PE across the United States during the initial outbreak of the COVID-19 pandemic</td>
<td>4,362 PE teachers participated (52% representing elementary, 25% secondary, and 23% multilevel). A link to the survey was distributed using Google Forms. Response options included Likert-type scales, multiple selection, yes/no, and open-ended responses.</td>
<td>Descriptive statistics, chi-square, binary logistic regression, and Wald tests were used for analysis.</td>
<td>20% of the teachers reported they were less effective teaching online.</td>
<td>Expected this number to be higher since they lacked time for preparation, coupled with the abrupt transition to remote teaching. These experiences are important to acknowledge and address when attempting to help teachers deliver equitable and effective remote PE instruction. Training is needed to become more effective remote instructors, and to deliver quality instruction.</td>
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<td>Erin Centeio,</td>
<td>The Success and Struggles of Physical Education Teachers</td>
<td>Journal of Teaching in Physical Education</td>
<td>To investigate PE teachers’ perceptions of implementing PE during the</td>
<td>4,302 PE teachers participated in multiple choice and open-ended survey questions. Survey was designed using Google forms and distributed online.</td>
<td>Qualitative and quantitative analysis, collaborative data analysis, inductive and deductive coding, and thematic analysis were used.</td>
<td>Successes included learning technology, engaging students, and creating useful content.</td>
<td>Technology was noted as a source of success when they were able to use technology to successfully connect with students and provide meaningful PE experiences. They were unable to require students to participate. Physical educators will need quality, evidence-based techniques to be prepared for future online instruction. Professional development focusing on effective practices in online teaching is necessary.</td>
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<td>Kevin Mercier,</td>
<td>While Teaching Online During the COVID-19 Pandemic</td>
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<td>as well as to explore their needs about support for future teaching</td>
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<td>Alex Garn,</td>
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<td>Risto Marttinen,</td>
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<td>Ann Pulling Kuhn, Hannah R. Thompson, Collin A. Webster, Charlene Burgeson, Jamie Chriqui, Tevin Okutoyi, and Erin R. Hager</td>
<td>Education Teachers’ Perceived Effectiveness in Association with Student Attendance, Teacher Adaptability, External Educational Supports, and Teaching Format During the COVID-19 Pandemic</td>
<td>Journal of Healthy Eating and Active Living</td>
<td>To examine PE teachers’ perceived effectiveness in association with student attendance, student engagement, teacher adaptability, external PE supports, and teaching format</td>
<td>A survey was sent via email to 134 public school PE teachers from 26 states by PE related organizations. Responses were on a five-point Likert-type scale.</td>
<td>Descriptive analysis, binary logistic regression, and SPSS version 26 were used for analysis.</td>
<td>Teacher effectiveness, adaptability, student attendance and engagement, and external PE support, all decreased during the pandemic.</td>
<td>Teacher effectiveness decreased during Spring 2020, which is in line with other studies that found that PE teachers perceived themselves to be less effective. Reported declines in student attendance and engagement were in line with national data. PE support declined which might indicate that schools were not prepared for the abrupt transition. Results highlight the importance of additional professional development for remote teaching, so teachers are better able to adapt to changes.</td>
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<td>Hyun-Chul Jeong, and Wi-Young So</td>
<td>Difficulties of Online Physical Education Classes in Middle and High School and an Efficient Operation Plan to Address Them</td>
<td>International Journal of Environmental Research and Public Health</td>
<td>To identify the difficulties of middle and high school online physical education classes due to the pandemic and suggests ways to efficiently manage future online physical education classes in Korea</td>
<td>Online videos, participants’ journals, and individual and group interviews were examined.</td>
<td>Inductive analysis focusing on open coding, axial coding, and core coding was used for analysis.</td>
<td>Teachers had concerns about how to make online classes meaningful. PE teachers resorted to trial-and-error approaches. They needed training.</td>
<td>PE teachers across Korea as in the U. S. lacked online expertise. The sudden shift left them unprepared and struggling with unfamiliar teaching methods. Teachers need educational strategies that will engage and motivate students to participate in physical activity. Teacher collaboration provided help to those teachers who had difficulty creating content in the early stage of online classes. Studies comparing and analyzing different countries’ experiences will aid in providing effective online physical education classes.</td>
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<td>Hande Baba Kaya</td>
<td>Views of Physical Education Teachers on Distance Education During the Covid-19 Pandemic Period: A Qualitative Study</td>
<td>International Education Studies</td>
<td>To examine the opinions of physical education teachers about the remote (online) education of schools due to Covid-19 in Turkey and in the world and the remote teaching of physical education lessons in this process.</td>
<td>Data were collected face-to-face from 20 physical education teachers (8 female and 12 male). The interview consisted of 4 questions. Participants were recorded with a tape recorder.</td>
<td>Descriptive analysis and content analysis methods were used to analyze the data.</td>
<td>Teachers feel inadequate. Students’ interest and motivation decreased. Students lacked computer or internet access. Communication and technical problems existed with no support. PE is as important as other courses in curriculum.</td>
<td>Teachers lacked self-confidence in using technology and were unprepared for the transition. This was a common theme throughout the world. The importance of enriching physical education content is necessary for student motivation. Teachers sharing information during pandemic was a wonderful way in meeting needs. Teachers can view this as an opportunity to learn and overcome some of the problems.</td>
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<td>Iván López Fernández, Francisco Javier Gil-Espinosa, Rafael Burgueño, and Antonio Calderón</td>
<td>Physical education teachers’ reality and experience from teaching during a pandemic</td>
<td>Sport, Education and Society</td>
<td>To explore the reality from several PE teachers’ perspectives in Spain and to reflect on the type of PE that the global pandemic influenced.</td>
<td>12 Spanish (11 men and 1 woman) public school secondary PE teachers were interviewed online. Semi-structured interviews involved 2 – 4 teachers for an average of 63 minutes. Interviews were recorded and transcribed.</td>
<td>Inductive and descriptive approaches were used.</td>
<td>They had no clear focus on quality PE instruction. A lack of training posed difficulties and barriers. PE teachers supported each other. Continuing professional development must be ongoing.</td>
<td>The same themes occur in many articles regardless of country. Peer support improved teaching and provided psychological support for teachers. They feel a bit more prepared with the use of digital technology if there is a re-emergence of a pandemic. The use of digital technology during the pandemic has led teachers to recognize its potential to increase students’ physical activity in and out of school. PE teachers showed higher levels of collaboration and support than teachers from other subjects.</td>
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<td>Brandon Foye, and Michelle Grenier</td>
<td>Teaching During a Pandemic: Physical Educators’ Reflections on Teaching Remotely</td>
<td>Journal of Online Learning Research</td>
<td>To investigate the experiences of teachers who taught remotely during the pandemic and their perceptions of online physical education.</td>
<td>Public school physical educators from 3 different New England states (11 males, 4 females) participated in semi-structured interviews lasting between 50 – 60 minutes over Zoom videoconferencing software.</td>
<td>Analysis was performed using thematic analysis, open coding, axial coding, and selective coding.</td>
<td>No one received online training prior to the pandemic. Lack of student accountability was a big obstacle to student success.</td>
<td>Teachers constructed their own knowledge for how to implement online PE. Course participation should be mandatory, and PE be viewed as equal to academic subjects. Opportunities should be created for online social interactions among students, and their peers, and the teacher.</td>
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