

## PEDAGOGY

# If You Build It, They Will Come: Physical Educators' Perceptions Regarding How to Design an Optimal Online Physical Education Resource

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### Abstract

*In the age of COVID-19, online physical education (OLPE) has emerged as a major part of the day-to-day professional practice of P–12 physical education teachers and physical education teacher education (PETE) faculty. Yet little is known about what would optimize an OLPE resource from the perspective of physical educators. This study addressed this knowledge gap. A convenience sample of P–12 physical education teachers (n = 9) and PETE faculty (n = 10) was recruited to participate in six focus groups. Data were qualitatively analyzed with both deductive techniques and inductive techniques and themes across both participant groups (physical education teachers and PETE faculty) and by group were identified. Across-group themes included generally negative views of OLPE, concerns of equity and context, thoughts on assessment, and design ideas for virtual resources. Within groups,*

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*P-12 physical educators shared concerns about grading and providing meaningful feedback, whereas PETE faculty focused on ensuring that OLPE was designed and delivered considering best practices. This study builds on a nascent line of inquiry that informs the development of an OLPE resource to meets physical educators' professional needs during the pandemic and into an inevitable future where virtual teaching and learning are status quo.*

Prior to the COVID-19 pandemic, online physical education (OLPE) in the United States was mainly a matter of choice for teachers and students to best fit their teaching and learning needs (Daum et al., 2021). It was defined as “an alternative medium used to deliver physical education – often to secondary students” (SHAPE America, 2018, p. 4). OLPE was never intended to serve as a ubiquitous educational model to meet the needs of every teacher and child, but the pandemic, which drove schools to quickly adopt online instructional methods, has forced educators to strive for this outcome. Nearly all (95%) physical education teachers who responded to a national survey indicated they were using fully online or hybrid formats to teach their classes during the 2020–2021 school year (Burgeson et al., 2021).

The sudden rollout of OLPE at scale has presented numerous challenges. Only 10% of teachers from a national sample reported prioritizing National Standard 1 (the development of students' motor skills; Mercier et al., 2021), even though SHAPE America states in its guidelines for OLPE that it “considers the development of motor skill competence as the highest priority of physical education” (SHAPE America, 2018, p. 1). Issues with the unprecedented pivot to OLPE have been evidenced in other countries, as well. In a survey of physical education teachers in Hong Kong, over half (53%) reported having difficulties with OLPE, with “lack of practical skill training” being the most frequently cited difficulty (Chan et al., 2021). Additionally, case study research with teachers in South Korea found that they used trial and error to cope with virtual programming when school campuses closed (Jeong & So, 2020).

Since the pandemic's onset, there has been a turgid expansion of OLPE resources and recommendations for teachers in the United States, from leading OLPE scholars (e.g., Daum et al., 2021; Goad et al., 2021; Killian et al., 2021) and SHAPE America (2020), as

well as through initiatives such as the Online Physical Education Network (OPEN; [openphysed.org](http://openphysed.org)). Yet the evidence base informing best practices in OLPE remains relatively undeveloped (Kooiman, 2017), and little research has specifically investigated how to optimize the design and delivery of OLPE resources to facilitate their use by teachers and students. An essential step toward understanding how to increase the usability of OLPE resources is considering the perceptions of physical educators, including P–12 teachers and university teacher education faculty. Physical education teachers serve as frontline end users of OLPE who directly engage in its technologies to deliver quality learning experiences to students. Further, physical education teacher education (PETE) faculty are called upon to prepare both preservice teachers and in-service teachers to use such technologies effectively (Krause et al., 2020).

This study explored physical education teacher and PETE faculty perceptions of how to optimize the design and delivery of an OLPE resource that is (a) easy to navigate and user-friendly, (b) equity-minded, (c) developmentally appropriate, (d) progression-oriented, (e) learning-focused and aligned with physical education standards, (f) assessment-driven, and (g) able to support students' accumulation of 60 min of physical activity each day. These conditions for OLPE are based on another study we conducted with P–12 physical education teachers (D'Agostino et al., 2021) and are consistent with several key perspectives from the related literature. Research has found that physical education teachers and PETE faculty experience challenges using OLPE (Baek et al., 2018; Gibbone et al., 2010; Jones et al., 2012), and this has continued to be an issue in the context of COVID-19 (Centeio et al., 2021). Thus, understanding physical educators' perspectives on what characteristics are needed to make an OLPE resource easy to use is important to reducing perceived implementation barriers and ensuring these end users can successfully adopt such a resource.

Additionally, issues of equity warrant careful attention in the context of OLPE (Daum, 2020). The digital divide separates students who have more and less (or no) access to OLPE technologies needed for successful learning, on the basis of geographic location (e.g., urban vs. rural), sociocultural status (e.g., high-income vs. low-income), and available technical options (e.g., types of devices used

at home; Centeio, 2017; Huerta et al., 2015; Webster, D'Agostino, et al., 2021). In a recent survey study with school-based professionals in the United States (primarily physical education teachers), one of the most frequently cited challenges of school closures during the pandemic was students' access to online learning (Pavlovic et al., 2021). Mercier et al. (2021) found similar results from their survey data, with just under half (49%) of physical education teachers responding that their students had sufficient access to OLPE technology for learning purposes. Further, scholars have stressed that considerations for students with disabilities must be given a high level of priority in the design and delivery of OLPE (Basham et al., 2015; Webster, D'Agostino, et al., 2021).

A third perspective informing this study was the repeated contention in the literature that OLPE should be consistent with in-person physical education with respect to expectations for quality programming (Daum, 2020; SHAPE America, 2018; Webster, D'Agostino, et al., 2021). For instance, SHAPE America (2018) outlines appropriate practices for OLPE, which largely mirror those recommended for in-person physical education (e.g., following a curriculum that addresses all state and/or national standards, using assessments that monitor students' standards-based learning and physical activity participation). Yet there appears to be a weakness in OLPE to fully address the national physical education standards, particularly the development of students' motor skills (Daum & Woods, 2015; Mercier et al., 2021; Killian et al., 2019). Additionally, just over half of the respondents in the Mercier et al. study (2021) reported they had required their students to do assignments for physical education during school lockdowns.

Finally, the promotion of students' physical activity is an important role of physical education (Sallis et al., 2012), but research conducted during COVID-19 has revealed that the physical activity levels of school-aged youth in the United States have declined in the wake of the pandemic (Dunton et al., 2020). Webster, D'Agostino, et al. (2021) recommended that OLPE research and practice align with the Comprehensive School Physical Activity Program (CSPAP) framework, which draws on before-, during-, and after-school contexts—including family and community settings where many students engage in OLPE—to increase students' daily physical

activity while supporting the educational goals of standards-based physical education. Consistent with this view, exploring physical educators' perceptions about the link between an OLPE resource and the promotion of students' physical activity was an important aspect of this study.

This study expands upon an investigation from D'Agostino et al. (2021), which used a quantitative survey to examine physical education teachers' perceptions about optimal design features for an OLPE resource. In that study, participants considered the significance of four design features (e.g., a bank of videos for teachers, a bank of videos for students, a list of activities categorized by standards, and a discussion board for teachers) in relation to each of the aforementioned conditions for OLPE (e.g., equity-minded, assessment-driven, able to support students' physical activity). D'Agostino et al. found that participants rated a bank of videos for students as the most significant design feature for creating an OLPE resource that is usable, accessible, and can facilitate assessment. Participants rated a discussion board for teachers as the most significant design feature to support the delivery of equitable physical education. To track students' physical activity, participants rated a list of activities categorized by standards as the most significant design feature. In the present study, we sought to probe physical educators' perceptions more deeply about an optimal OLPE resource, by using a qualitative research approach.

## Method

### Participants

Through convenience sampling (Creswell, 2013), we recruited nine P-12 physical education teachers (5 female, 4 male) and 10 PETE faculty (6 female, 4 male) to participate in the study. Fourteen of the participants were White, two were Black, two were Asian, and one was Hispanic. Participants were from California (1), Colorado (4), Connecticut (1), Florida (2), Georgia (2), Illinois (1), Indiana (2), Maryland (1), New Jersey (1), North Dakota (1), South Carolina (2), and Virginia (1). We sent an email to these individuals inviting them to participate in the study, on the basis of their previously established familiarity with one or more members of the research team. All participants provided their consent to participate,

and the research design was approved by the Institutional Review Board (IRB) at Indiana University Purdue University Indianapolis.

## Data Collection

To explore the perceptions that P–12 physical education teachers and PETE faculty had of OLPE development and delivery, a qualitative design was adopted (Creswell, 2013). Interviews (in the form of focus groups) were selected as the method for data collection because it was important to learn about this phenomenon from the lived experience of the interviewee (Kvale & Brinkmann, 2009). During the summer of 2020, P–12 physical education teachers and PETE faculty participated in focus group interviews. A semistructured interview format was used for the focus groups, which allows the researcher to react to the responses of the participants and more closely mimics a conversation than a traditional interview (Kvale & Brinkmann, 2009). Three focus groups were conducted with P–12 physical educators and three were conducted with PETE faculty. Each focus group included between two and four participants from the specific stakeholder group and lasted approximately 60 min. All interviews were audio recorded and were subsequently transcribed verbatim. The interview guide was developed on the basis of the previously mentioned conditions for OLPE (i.e., user-friendly, equity-minded, developmentally appropriate, progression-oriented, standards-aligned, assessment-driven, and physical activity-promoting), as informed by research from D’Agostino et al. (2021) and the related literature (e.g., Centeio et al., 2021; Daum, 2020; Mercier et al., 2021; SHAPE America, 2018; Webster, D’Agostino, et al., 2021). Questions varied by stakeholder group on the basis of the context through which they could provide insight on the topic. Sample questions included “Considering different types of home environments for students (e.g., apartment, small spaces, no outdoor access, no supervision, etc.), what aspects of an OLPE resource would need to be adaptable and what adaptations would be needed?” and “Describe your use of virtual/remote/online tools or resources to design, develop, and/or deliver physical education and physical activity opportunities to students during the pandemic.”

## Data Analysis

Prior to analysis, each interview transcript was read and reread multiple times to establish familiarity with the data. Following this procedure, data were analyzed deductively with a provisional start-list of codes that were established on the basis of the research questions (Miles et al., 2019). Each focus group was coded from the start-list and additional codes emerged inductively during this process. Next, pattern coding was conducted and codes condensed together into groups on the basis of similarities between codes and theme codes were established. An independent member of the research team confirmed the theme codes and any discrepancies were settled at this stage of analysis. Last, the theme codes from the P-12 physical educators and the PETE faculty were compared for similarities and differences between groups. Interpretations of the results were made on the basis of the themes and patterns established throughout the coding process. Participants are identified using pseudonyms.

## Findings

The findings reflected some themes that were evident across both groups of participants (P-12 physical education teachers and PETE faculty) and other themes that were specific to each group. Across-group themes included generally negative views of OLPE, concerns of equity and context, thoughts on assessment, and design ideas for virtual resources. Within groups, P-12 physical educators shared concerns about grading and providing meaningful feedback, whereas PETE faculty focused on ensuring that OLPE was designed and delivered considering best practices.

### Across-Group Results

Several themes related to perceptions of OLPE design and delivery were shared across groups. All participants (except for two PETE faculty) shared that they had mixed feelings and somewhat evolving perceptions of OLPE and/or that they had not spent much time considering this mode of instruction. “Leila” (P-12) felt very strongly that OLPE was not the best delivery mode for students. She explained,

I feel very confident that virtual [physical education] should not ever be a thing. Um, I think the hybrid, I liked the hybrid

thought of it, but there's so much social-emotional aspects of PE that the students are not getting. And it's terrifying right now. So, um, you know, just interacting with one another and, you know, they learn so much from one another in PE, you know, just modeling different behaviors with each other and working in groups and things like that, that I think you can't replace, you know, virtually in any way, shape or form.

Participants also shared opportunities that they had discovered after teaching (or observing others teaching) physical education online for a short time including focusing more on cognitive concepts, more time to cater to social-emotional learning, and opportunities to advocate for their profession. Further, some who initially had a more negative view came around to appreciate the possibilities after teaching online for a short time. For example, "Brooke" (P-12) shared that "there's been a lot of silver linings to this. I feel like we can, like, move forward in [physical education] and use a virtual platform to further promote physical education as a whole." However, she added that she would "rather be in person." Many of the negative views of OLPE likely stemmed from the reality, which was reiterated by all PETE faculty, that there was a lack of training in PETE programs related to OLPE development and delivery.

All participants also shared their concerns about equity and the need to understand home context when designing and delivering OLPE. While awareness of specific equity issues varied, participants felt that there was a lack of equity in general with current OLPE approaches/options and that equity was a necessary consideration in online programming. Ensuring that OLPE resources were available for English language learners (ELL) was important to all participants. For example, "Veronica" (P-12) shared, "Obviously if you had a bunch of languages that would be helpful cause we have quite a few, a big ELL population, but I also think that the visual is huge to make kids understand." Similarly, "Zoe" (PETE) explained,

If equity is at the forefront, offering multiple languages, at least in that initial rollout, I think speaks volumes that we're trying. We're never going to always get it right on the first attempt. But at least we have English, Spanish versions of this

[OLPE resource] to address some of the major languages that are spoken in different communities.

The participants also referred to language in regard to making OLPE more inclusive for students with disabilities and students who may be experiencing homelessness (e.g., not specifying a room in a home that students may not have).

Knowledge of the home context and family “unit” were also frequently mentioned with respect to equity. Discussing the home context, “Jasmine” (P-12) said, “Some kids may live in homes, some kids may live in apartments. Some kids may live on the second floor; there’s somebody below them. There’s just a lot to consider.” Participants also addressed the importance of being aware of different contexts beyond the physical structure of the “home” when designing content for OLPE. “Gregory” (PETE) said, “If it’s not even a safe neighborhood, then it’s probably not a great idea to tell kids ‘Okay, go for a couple laps around your block.’” He continued,

I do think there needs to be a preassessment check that the teacher can send to the families about where do you live, what kind of access, what kind of equipment do you have in the house, what resources do you need help with. It gets that family input in regard to what do you have access [to] currently.

Regarding the family unit, participants mentioned multi-generational homes, students in foster care, number of siblings, and students who may not have a supportive family as things to consider when planning OLPE experiences. “Lucy” (PETE) explained,

I don’t remember where it came from, but someone mentioned using the language of your “grownups.” So, don’t refer to the parents at home...we say parents all the time and they might not be living with a parent or a guardian. Well, guardian is a weird term to call a grandma or a foster parent or whomever it is that is the person in charge. So, I mean, that doesn’t have to be the term, but I think “Ask your grownup” or something like that is more inclusive than saying parent.

While all participants acknowledged the importance of support from parents/families, “Lenny” (P-12) acknowledged that some students cannot depend on support at home. He shared,

For kids who don’t have that parental support, or have parents who are, um, working all through the day, it’s just not fair. Um, and something, you know, growing up in a middle-class home that I probably wouldn’t have thought of until, you know, I saw some students experience [lack of parental support at home] this year.

This acknowledgment that he hadn’t spent a lot of time thinking about this concept prior to the pandemic was not unique. While physical educators traditionally developed strong relationships with students, many participants shared that teaching virtually forced them to get to know their students in different ways than they had previously.

Other issues of equity that both groups acknowledged included access to reliable internet and compatible devices, older siblings (who are also students) acting as caregivers, and general concerns with how to get enough information about students’ circumstances to design equitable learning experiences.

Discussion of assessment was also common across groups and included thoughts around developmental appropriateness, consideration of standards, ways to engage families, the need for various options, and shifting how they think about assessment. Participants felt that assessment should be at the forefront of any curriculum design process. As “Micah” (PETE) explained, “You can’t build an activity without thinking about academic language and assessment.” Many of the participants mentioned focusing on cognitive and affective skills for assessment and using various strategies for assessment, but it was also something that many of them were not confident doing because of lack of training related to teaching OLPE. However, “James” (P-12) explained that online programming presented an important opportunity for assessment in physical education. He said,

If we assessed correctly, it can help parents and students because that’s really essentially going to be a lot of their feedback, you know? So, they start to generate that self-feedback, maybe some peer feedback if they were shooting

[basketball] with someone else, because that's probably the one thing that misses [in OLPE] is that specific individual feedback, right? At the time as they're doing it, you know, and maybe even helping them to understand that, you know, the feedback that they can get from themselves is more valuable than the feedback that I can give them.

The most consensus between P-12 and PETE participants came when discussing design ideas for virtual resources. Both groups agreed that OLPE needed to be delivered through a simple, engaging, and customizable platform/resource. When thinking about making it simple, they frequently mentioned being organized as an important factor. "Brooke" explained her organization of online content:

So, I have it organized almost in units. Instead of having like the daily theme, I'd have agility, coordination, basketball skills. So, then, if the student wants to do basketball skills, they can click on the classroom, scroll down the basketball skills and then they could progress. So, they are at level, whatever, like they feel comfortable dribbling, they can do like another challenge. So just trying to do progressions that way.

Being engaging was also viewed as important. Participants suggested strategies such as the use of pictures, videos, options, and clear navigation. "Alejandro" (P-12) explained that his biggest concern was keeping online program delivery engaging just like he would for in-person instruction. He said,

Kids are gonna get tired and bored of the same stuff. And it's like, we've got to log in to the computer at the same time and it's the same, you know? So just finding a way to break up the monotony of things.

Participants also all agreed that the online platform and resources should be customizable and flexible for teachers to use, such as by having options for teachers to include a video of themselves, integrate specific language that they use in their own teaching, and select different equipment. "Jada" (PETE) envisioned something like a website she used in her daily life:

I don't know about you all, but if I ever go to like recipes.com and look for something, I'm always like "okay do I have the ingredients? Yea yea. Do I know how to do it?" Sure, but then, like, I'm looking at all the different reviews like how people are like "oh you know what I hate are onions so I added something else."

## **P–12 Physical Educator Results**

While the P–12 physical educators recognized the need for assessment within OLPE, their main concern related to grading online and providing meaningful feedback to all students. Leila shared, "I'm aware of best practice with grading with physical education, but I'm not aware of grading online, what is considered best practice." This was consistently echoed by other participants, and some also had a hard time expressing their concerns related to grading because early on in the pandemic, they were prohibited from assessing and grading students at all in physical education. "Will" (P–12) worried about accountability when it came to grading on the basis of the type of content he was teaching online. He shared,

I'm giving them crossword puzzles and exercises to do . . . so that I'm able to show some results or, some kind of grades . . . because [administrators and parents are] going to look at the science teacher, the math teacher, and say, well, you guys are more important [than physical education] because y'all have grades on this. Well, [physical education] you're just doing a grocery game or something like that. So that's the big thing that concerns me. Accountability and making it, um, worth it.

Others talked about the need to ensure that grades were also attached to meaningful feedback that was individualized for each student. While most participants agreed that this was a big challenge because physical educators see most (if not all) students in a school building, "Ana" (P-12) shared a strategy she learned from one of her own children's teachers:

She would just record herself, giving him the feedback. Saying his name multiple times was very rewarding. Like

even as a parent. You know? Like that was just, she made it personal. She didn't just give him a written email feedback. It was personal. And it was like probably 20 seconds of her time. Done. She sent it off. It's big.

However, there was still some concern around the extent to which students were engaging with feedback. Veronica expressed,

I think for me, one of the more frustrating things, and I get this on this online teaching, is kids just don't read your feedback, period. And then they email you, why did you, blah, blah, blah. And I'm like, it's in your feedback.

### **PETE Faculty Results**

PETE faculty who participated in this study shared many of the same thoughts about OLPE as their P-12 counterparts, but they also consistently focused on ensuring that OLPE was designed and delivered while considering best practices. Specifically, along with the other elements mentioned previously (e.g., equity, assessment), they frequently mentioned a standards-based curriculum that was developmentally appropriate and included proper alignment. "Carl" (PETE) acknowledged that there were enough online/virtual resources for physical education but emphasized "there's so much out there but it's not evidence- or standards-based." In discussions of best practices related to assessment, the notion of developmental appropriateness came up. "Grace" (P-12) asked, "What do we do with our six-year-olds and seven-year-olds who might not have that same level of ability to self-reflect because developmentally they don't know where they stand?" This point around developmental appropriateness was also mentioned with respect to providing progressions, multiple opportunities to practice, and alignment with standards. The concept of backwards design also came up in discussions of developing OLPE programs and associated resources as a best practice for curriculum development.

### **Discussion**

This study explored P-12 physical education teacher and PETE faculty perceptions of the following conditions for OLPE design and delivery: (a) easy to navigate and user-friendly, (b) equity-

minded, (c) developmentally appropriate, (d) progression-oriented, (e) learning-focused and aligned with physical education standards, (f) assessment-driven, and (g) able to support students' accumulation of 60 min of physical activity each day. We adopted a qualitative research design to build upon the quantitative results of the D'Agostino et al. (2021) study, in which D'Agostino et al. (2021) asked physical education teachers to consider these same conditions while rating the significance of different OLPE design features. This developing line of inquiry is important because understanding how to design optimum OLPE resources for physical educators is a priority in the context of the COVID-19 pandemic and in other instances when remote learning is necessary. It is also foundational to ensuring that physical education keeps pace with the increasing digitization of the education field at large (Digital Learning Collaborative, 2020; Evergreen Education Group, 2016; Kooiman, 2017).

On the basis of this study, views of OLPE among physical education teachers and PETE faculty are generally negative, although there is evidence of a growing understanding of how OLPE might support student learning. One area of focus is students' development beyond physical skills. For instance, although the pandemic has limited students' in-person interactions with peers, OLPE presents new opportunities to foreground social and emotional learning. In a high school in New Zealand during the COVID-19 pandemic, teachers support collaboration by facilitating small group activities (Yates et al., 2021). Additionally, students take initiative to connect with one another during class by using social media, and this may allow for better collaboration compared to in-person lessons in which the teacher exerted more control over class activities (Yates et al., 2021). In tandem with the finding that a bank of videos for students is the most significant design feature that supports the usability, accessibility, and assessment feasibility of an OLPE resource (D'Agostino et al., 2021), we suggest that videos include social activities that involve the use of breakout rooms and social media.

Equity is also a prominent issue in OLPE during COVID-19 (Centeio et al., 2021; Howley, 2022; Vilchez et al., 2021). For instance, physical education teachers find it a challenge to reach all students during remote learning because of problems with internet access for some students (Centeio et al., 2021). Moreover, physical education

teachers have concerns about inclusiveness, not only in terms of access to technology but also from other perspectives, including equipment availability, students' outside-of-school responsibilities (e.g., work), and families being able to support virtual learning (Vilchez et al., 2021). Our study raises additional considerations, such as the need to support ELL learners and students living in a variety of situations (e.g., unsafe neighborhoods, multigenerational homes, foster care). Given that physical education teachers rate a discussion board for teachers as the most significant design feature to enhance the equitability of an OLPE resource (D'Agostino et al., 2021), we recommend that such a resource include discussion threads that focus on students' individual differences (e.g., language fluency, ability), home contexts (e.g., available technology, space for physical activity, family support), and strategies that physical education teachers are using to tailor their virtual programming to meet the diverse needs of their students.

This study further builds on the results of an earlier investigation (D'Agostino et al., 2021) by providing deeper insight into integrating assessment practices into an OLPE resource. For P-12 physical education teachers, teacher feedback is a particular area for professional support, especially feedback for use to enhance students' skill development. This aligns with the finding from D'Agostino et al. (2021) that physical education teachers believe a bank of videos for students is the most significant OLPE design feature for facilitating assessment. The use of video feedback in physical education is a well-established practice in in-person lessons (Darden & Shimon, 2000) and it can be an effective means for increasing students' motor learning (Modinger et al., 2022). For remote learning purposes, students can be asked to video record their performance of different skills, self-assess their performance, and send the videos (e.g., upload, email) to the teacher for feedback. Therefore, the idea of having a "bank of videos" can be expanded from videos of activities for the class to try, to videos of each learner's skill progression, which might become a personalized resource for students. This also supports another key area of physical education teachers' focus in this study: grading and accountability.

For PETE faculty, standards-based instruction and developmental appropriateness in the design of an OLPE resource are important

areas, including concepts such as progression and backward design. It is also important for students to have multiple practice opportunities to achieve learning standards. A list of activities categorized by standards is a significant design feature for tracking students' physical activity participation (D'Agostino et al., 2021). From this perspective, it appears teachers view standards-based instruction and students' physical activity participation as joint pursuits in physical education. Optimizing the design of an OLPE resource may thus entail identifying the standards that each activity in the resource supports, including a range of physical activities that align with each standard, and presenting these activities in sequences that students can explore to work toward skill mastery while accumulating minutes of physical activity in line with public health guidelines.

This study adds to the small body of research that focuses on the perceptions of physical educators in the time of the COVID-19 pandemic. However, it is important to acknowledge that there are several limitations to our research. The purposive sample limits the generalizability of the study's findings. P-12 physical education teachers and PETE faculty who work in different contexts and have different resources, training, and experience related to OLPE may not share the views of the participants in this study. Additionally, the sample size is small, and it is possible that the data would have borne out richer themes with more participants. At the time of the study, it was a challenge to recruit participants because only a couple of months had passed since the onset of COVID-19 in the United States and physical educators in P-12 and higher education settings were struggling to cope with the new realities of their professional work.

It is clear from this study and others (e.g., Howley, 2022; Vilchez et al., 2021) that professional development specific to OLPE is lacking for physical education teachers given the shift to remote learning at the onset of COVID-19. Adequate preparation for OLPE must begin with preservice teacher education programs. Recent literature suggests there is a lack of technology integration in PETE (Krause et al., 2020). For preservice physical education teachers who teach virtually during secondary methods courses, personalization (e.g., demonstrating how class content relates to students' personal interests and goals) and inquiry-based instruction (e.g., asking questions,

encouraging students to use the chat feature of Microsoft Teams during lessons) constitute key areas of pedagogical skill development for the preservice teachers to be successful with synchronous OLPE delivery (Webster, Moon, et al., 2021). On the basis of the results of the present study, other areas of focus for learning to teach OLPE include supporting learners' social development, tailoring program delivery to meet individual students' needs, giving students' feedback, holding students accountable for learning, and teaching toward content standards. An OLPE resource that allows preservice teachers to practice these skills through supportive design features (e.g., a bank of videos for students that includes social activities, a list of physical activities linked to learning standards) will help to foster the confidence and competence that physical educators need to provide effective online learning experiences for P–12 students.

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