Exploring Future Research in Physical Education: Espousing a Social Justice Perspective

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ABSTRACT
Although there has been forward movement in identifying and addressing diverse learning needs, social justice education is not a significant part of the current standards for beginning teachers or K-12 students in the U.S. Throughout our standards-based history, social justice has been more of a hidden curriculum. To attain the 50 Million Strong by 2029 goal, it is vital to acknowledge that physical education is a social justice issue. Without consideration of the historical, political, and social contexts that permeate and frame physical education, along with the social identities and lived experiences of our future teachers and students, it is unlikely that this goal will be sustained. While concerns have been voiced relative to the standards-based teaching movement, in a country that espouses standards-based education, a first step in moving any educational reform forward is to formalize its inclusion in the national standards that serve to guide our discipline. A philosophical shift may be what is needed for change to occur regarding social justice education in an attempt to enhance the learning opportunities for all students. A forward step in creating this change is to address the research and pedagogical practices of our current physical education teacher education and K-12 programs, along with the physical education standards and policies at the national and state levels. We specifically articulate connections between social justice education and four key, interconnected research areas related to (a) occupational socialization, (b) curriculum, instruction and assessment, (c) technology, and (d) professional development.

SHAPE America – Society of Health and Physical Educators (2015) recently launched the 50 Million Strong campaign “to prepare all children to lead active and healthy lives.” This charge emphasizes four interrelated areas: (a) physical activity, (b) healthy behaviors, (c) positive health and physical education policies, and (d) health and physical education standards. As a part of this agenda, SHAPE America has asked groups of scholars to work in collaborative teams to explore future research topics and questions intended to advance the goal of 50 Million Strong. In this paper, we will explore future research directions and pedagogical opportunities for teacher educators as well as preservice and in-service teachers in the areas of physical education related to (a) occupational socialization, (b) curriculum, instruction and assessment, (c) technology, and (d) professional development. Collectively, we argue for a research agenda that examines the explicit integration of social justice education (SJE) within physical education. This includes supporting language in relevant standards and policy documents, such as the Initial Physical Education Teacher Education (PETE) Standards (SHAPE America, 2017), and the National Standards and Grade-Level Outcomes for K-12 Physical Education (SHAPE America, 2014). We situate our call for research in these four areas through the adapted social-ecological framework (SEF).

As explained by Castelli and van der Mars (2018), the four charges of the 50 Million Strong campaign stretch across multiple levels of the SEF. Stemming from Bronfenbrenner’s (1989) ecological systems theory, Sallis, Owen, and Fisher (2008) created the SEF, which identifies five levels that influence youth’s physical education and activity experiences within both social and physical environments: intrapersonal, interpersonal, organizational, community, and public policy. Examples of influence in relation to physical education and activity include: physical activity enjoyment and motivation (intrapersonal), social support and parental/guardian support and modeling (interpersonal), school facilities and equipment as well as opportunities for participation (organizational), access to
programs as well as district-level policies (community), and state and national policies (public policy; Castelli & van der Mars, 2018).

Physical education scholars have historically encouraged a model of physical education that goes beyond sport and includes a more holistic approach to physical activity where all students have the ability to become physically literate and educated individuals (Penney & Jess, 2004). O’Connor, Alfrey, and Payne (2012) discuss utilizing the SEF to accomplish this task by “extending beyond performance and incorporating inter-intrapersonal and environmental considerations for physical activity within the education context.” (p. 366). To make this shift, one must be aware of unique characteristics of students and their communities, and the mutual responsibility between students and the community systems with which they engage to promote life-long physical activity. These factors prompt us to frame the future research in physical education through an SJE agenda that seeks to influence policy, standards, curriculum, and teaching practice at both the higher education and K-12 levels. We identified SJE as an important focus permeating all strands of our future research recommendations because of the continued diversification of public schools; the need for physical educators to be prepared to work with and be responsive to children from different socioeconomic, racial, cultural, and linguistic backgrounds; and the importance of addressing social inequalities that permeate our education systems (Azzarito, Macdonald, Dagkas, & Fisette, 2017). Accordingly, we define SJE as, both a goal and a process, where educators create a democratic environment that empowers students to actively engage in their education, understand the roles power, privilege, and oppression play in their lives, and through critical reflection how they can challenge and/or disrupt the status quo. (Walton-Fisette & Sutherland, 2018, p. 463)

A call for social justice education in physical education

For years, the primary goal of physical education was to develop a physically educated person (National Association for Sport and Physical Education [NASPE], 2004). More recently, the idea of a physically educated individual has been reframed to focus on physical literacy (SHAPE America, 2014). In the U.S. context, SHAPE America (2018) has defined physical literacy as “an individual’s ability, confidence, and desire to be physically active for life.” Across the Initial PETE Standards (SHAPE America, 2017) and the National Standards and Grade-Level Outcomes for K-12 Physical Education (SHAPE America, 2014), emphasis is placed on an explicit, public curriculum that includes documentation such as curriculum maps, syllabi, and policies and procedures (Dodds, 1985).

A component of the Initial PETE Standards is for beginning teachers to engage in culturally competent behavior and to demonstrate ability to plan for diverse learners, particularly related to (dis)ability (SHAPE America, 2017). Similarly, in the K-12 standard focused on personal and social responsibility, students are expected to demonstrate acceptance of differences when working with others, once again, primarily in reference to (dis)ability (SHAPE America, 2014). Although there has been forward movement in identifying and addressing diverse learning needs, SJE is not a required, mandated component of the current standards for beginning teachers or K-12 students in the U.S., which places us behind many other countries (Ovens et al., 2018). Throughout the history of U.S. education, social justice has been more of a hidden curriculum, which may include teachers’ implicit beliefs, values and their unexamined and unexplained pedagogical actions framed within historical and cultural systems (Dodds, 1985). To attain the 50 Million Strong by 2029 goal (SHAPE America, 2015), it is vital to acknowledge that physical education is an SJE issue. Without consideration of the historical, political, and social contexts that permeate and frame physical education, along with the social identities and experiences of our future teachers and students, it is unlikely that this goal will be sustained.

Over the last several decades, the racial and ethnic identities of the school-aged population in the U.S. have steadily diversified, with 50% of public-school students identifying as a racial minority in 2013. These demographics are projected to change specifically to 29% Hispanic, 45% White, and 15% Black by 2025 (National Center for Health Statistics, 2016b). In 2010, 307.8 million people populated the U.S., with 72.4% identifying as White. It is predicted, however, that by 2050 the U.S. population will grow to 394 million, with only 50% identifying as non-Hispanic White (US Census Bureau, 2011). These changing demographics have also increased the diversity of languages spoken in U.S. schools to meet the needs of the almost 10% of English Language Learners (National Center for Health Statistics, 2016a). Socioeconomic status also has significant potential to influence health and wellness, along with opportunities in education and employment. In 2016, 12.7% of the U.S population lived in poverty, and 18% of school-aged children were affected by poverty (US Census Bureau, 2017). The poverty rate is highest among Black (22%) and Hispanic (19.4%) families. Beyond these typically discussed demographics related to diversity in the U.S., it is critical to also acknowledge that other social identities,
such as gender, (dis)ability, sexuality, and religion, are significant when teaching about and for SJE (Walton-Fisette & Sutherland, 2018).

Collectively, we believe that, at the root of obtaining successful outcomes in our physical education classes, we must explicitly address and educate our students about and for social justice, both at the K-12 and higher education levels. The realities accompanied by the shifting demographic landscape in U.S. public schools lead to numerous questions that the physical education community will need to address if we are to accomplish the goal of providing high-quality physical education for all 50 million school-aged children. For example, how are we, physical educators, addressing these changing demographics in our society? How do they inform our curriculum, instruction, and assessment practices? What steps are we taking to educate our students about social identities, social inequalities, and social justice? Over the past few decades, scholars in the U.S. have engaged in research that has focused on race (e.g., Azzarito & Harrison, 2008), gender (e.g., Olivier & Kirk, 2016), social class (e.g., Flory, 2014), and (dis)ability (e.g., Brian et al., 2018). What influence has this research had on our curriculum and instruction?

Recently, a special issue in Physical Education and Sport Pedagogy explored how SJE is being addressed in PETE. Findings identified that physical education teacher educators in the U.S. minimally engaged in pedagogical practices related to sociocultural issues and SJE (Walton-Fisette et al., 2018). Some PETE faculty members did not espouse a social justice orientation (Hill et al., 2018), while others attempted to address social inequalities through teachable moments, but not in an explicit and intentional manner (Walton-Fisette et al., 2018). Challenges that influenced teaching about SJE included a lack of content knowledge, insufficient time, feeling constrained by the standards guiding teacher education, and a belief that teaching about social justice was not important (Ovens et al., 2018). Collectively, these findings shed light on the lack of SJE in physical education, both at the K-12 and higher education levels within the U.S. While concerns have been voiced relative to the standards-based teaching movement (Metzler, 2009), in a country that espouses standards-based education, a first step in moving any educational reform forward is to formalize inclusion in the national standards that serve to guide our discipline (Richards, Housner, & Templin, 2018). Toward this end, SJE should have a more overt focus in our Initial PETE Standards (SHAPE America, 2017) and the National Standards and Grade-Level Outcomes for K-12 Physical Education (SHAPE America, 2014). Scholars and policymakers in the U.S. may consider looking at global curricula, standards, and policies in New Zealand, Australia, Canada, and the United Kingdom to provide some direction in reframing their own documents (Ovens et al., 2018).

While social justice has been a hidden curriculum in physical education, the U.S., scholars in other countries have engaged in critical pedagogies through teaching practices and scholarly research to address social inequities (e.g., Fernandez-Balboa, 1997; Philpot, 2016). Currently, these countries are espousing SJE through transformative pedagogy, which emphasizes a critically reflective, action-based process that creates opportunities for change (Ukpokodu, 2009; Walton-Fisette et al., 2018). Thus, a philosophical shift may be what is needed for SJE to be leveraged in an attempt to create transformative learning opportunities for all students. A forward step in creating this change is to address the research and pedagogical practices of our current PETE and K-12 programs, along with the physical education standards and policies at state and national levels. We believe that SJE is central when considering the future research in physical education over the next decade; however, we also acknowledge that this is our perspective and that other scholars may have different viewpoints and recommendations to offer PETE faculty members and K-12 physical education teachers.

**Key research areas and questions to guide future scholarship in physical education**

The philosophical shift toward SJE in physical education would have implications for a variety of areas related to teaching and research in physical education. Toward this end, the following sections articulate connections between SJE and four key, interconnected research areas related to (a) occupational socialization, (b) curriculum, instruction, and assessment, (c) technology, and (d) professional development. We have selected these areas because we believe that they represent strong, historically and contemporarily grounded areas of inquiry that have relevance to advancing an SJE agenda in both research and practice. In short, we believe that a more salient focus on SJE would influence the occupational socialization of teacher educators and preservice and in-service physical educators. This would take time, as doctoral programs would need to be more inclusive of SJE content, which would then influence PETE, and eventually K-12 physical education. Changes related to curriculum, instruction, and assessment would also be essential as we strive to address the changing identities of our students and create curricula and assessments that are more inclusive and equitable.

We also need to consider the advancement of technology as a tool to promote more inclusive PE programs, along
with the opportunity gap for those that do not have access to technologies. This is particularly important given that contemporary students are technological natives and were born into a digitally saturated world. Finally, we suggest that professional development opportunities are needed in relation to SJE; occupational socialization; curriculum, instruction and assessment; and technology to enhance the content knowledge and pedagogical opportunities for both preservice and in-service teachers. We believe that professional development and the processes through which we communicate, as a profession, is the linchpin to the growth and development of the field. The following sections focus on these four inter-related areas framed within social justice, which includes proposed future research questions. Table 1 includes a summary of all proposed questions.

The socialization of physical educators and teacher education faculty members

Occupational socialization theory (Templin & Schempp, 1989) is a dialectical model of workplace socialization that can be used to understand how individuals are recruited into, educated for, and socialized through careers in physical education. The perspective is dialectical because it acknowledges individuals’ sense of agency and ability to resist the influence of those seeking to socialize them (Schempp & Graber, 1992). Scholars using this theory have traditionally examined socialization through the phases of acculturation (i.e., pretraining socialization), professional socialization (i.e., initial teacher education), and organizational socialization (i.e., ongoing socialization in schools; Richards, Templin, & Graber, 2014). This model has also been extended to study the socialization of physical education doctoral students and faculty members (Russell, Gaudreault, & Richards, 2016).

Evidence collected through occupational socialization theory has consistently indicated that PETE recruits resemble those who taught them school-based physical education (Richards & Gaudreault, 2017). They tend to have experience in and believe that physical education should be structured around sport driven, multiactivity curricula (Ferry & McCaughtry, 2013). This mentality neglects alternative sport and lifetime physical activities that have wider appeal to groups that have been underrepresented in physical education, such as young women, minority students, and others who do not embrace traditional sport (Olivier & Kirk, 2016). Some individuals recruited into physical education also view the field as a career contingency for their true passion of coaching extracurricular sports (Konukman, Agbuga, Erdogan, Zorba, & Demirhan, 2010), which has implications for the amount of time they invest in teaching. Further, the continued marginal status of physical education, in schools, influences teachers’ work-life experiences as well as the attractiveness of the field to potential recruits (Laureano et al., 2014).

We agree with Curtner-Smith (2009) that socialization research should be concerned with breaking the cycle of nonteaching in physical education and believe that this begins with how physical educators are recruited and the values and beliefs of those who educate them in PETE. We, therefore, view occupational socialization theory as both a theoretical perspective for

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Table 1. Proposed research questions for future research in physical education.

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<thead>
<tr>
<th>Occupational Socialization</th>
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<td>● What are the conditions in teacher education programs that enable PETE faculty members to be both prepared for and supported in efforts to implement social justice pedagogies during teacher education programming, and how can doctoral programs in PETE be adapted accordingly?</td>
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<tr>
<td>● What mechanisms would facilitate the recruitment of a more diverse group of preservice teachers into the physical education profession and how would programs adapt to accommodate this diverse group?</td>
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<td>● How can teacher education programs adapt their practices to engage with and better prepare preservice teachers to integrate social justice pedagogies into their teaching, and how can accreditation standards be adapted to support this shift?</td>
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<tr>
<td>● What institutional and sociopolitical barriers exist that limit physical education teachers’ implementation of social justice pedagogies, and how can these barriers be overcome?</td>
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<th>Curriculum, Instruction, and Assessment</th>
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<td>● How do we effectively teach for social justice and successfully incorporate a models-based practice in physical education? Additionally, How does SJE “fit” within the design and implementation of each pedagogical model?</td>
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<tr>
<td>● How can PETE programs prepare preservice teachers on assessment literacy and how to consider sociocultural contexts and students’ social identities when developing and implementing assessments within their teaching practices?</td>
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<th>Technology</th>
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<td>● What challenges do physical education teachers encounter when implementing DTs into their curriculum? How are DTs used to promote student learning by using more inclusive and participatory pedagogies?</td>
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<td>● How can teacher education programs model the use of TPCK to enable the next generation of physical educators to effectively integrate DTs within their pedagogical content knowledge whilst promoting diverse and inclusive learning experiences for all students?</td>
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<td>● How can physical educators use DTs to enhance students’ HPA learning whilst guiding them to critically navigate cybersphere, interpret oppressive messages, resist obsessive messages promoted by corporate interests and control the use of their data for educational purposes?</td>
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<th>Professional Development</th>
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<tr>
<td>● How can in-service teachers gain knowledge about teaching for social justice and the pedagogical skills necessary to do so effectively through professional development?</td>
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<tr>
<td>● How are PETE faculty members receiving PE-PD in relation to their practice as teacher educators and what is their capacity to promote social justice pedagogies in their PETE programs?</td>
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conducting research and a conceptual framework for teacher recruitment, initial training, and continual professional development (Richards & Gaudreault, 2017). Accordingly, we suggest that future research related to teacher socialization in physical education take an active approach to promoting a more favorable future for the profession. It is particularly important that scholars understand how the socialization process can be used to recruit, educate, and support physical educators with a passion for SJE in physical education (Azzarito et al., 2017). From our perspective, this mission needs to be carried out both in reference to physical educators and PETE faculty members.

First, PETE faculty members have been identified as disciplinary stewards for the roles they play in both educating the next generation of teachers and conducting research to advance the field (Lawson, 2016). Innovations to teaching and learning are, to a large degree, directed by and mediated through PETE faculty members. If physical education is to espouse an SJE agenda, teacher educators must invest in this mission (Walton-Fisette & Sutherland, 2018). Relative to socialization, PETE faculty members should be prepared to teach for social justice in ways that pervade teacher education curricula. Concerns have been voiced, however, about a lack of pedagogical training during doctoral education (Ward, 2016), and social justice pedagogies are no exception (Walton-Fisette & Sutherland, 2018). An important research question is: What are the conditions in teacher education programs that enable PETE faculty members to be both prepared for and supported in efforts to implement social justice pedagogies during teacher education programming, and how can doctoral programs in PETE be adapted accordingly?"

Relative to recruiting future teachers, the physical education profession needs to understand the mechanisms through which diverse recruits can be attracted into the field. This diversity includes factors such as gender identity, race/ethnicity, socioeconomic status, and (dis)ability. Diversity should also include physical activity background, body structure, and competitive sporting experience (O’Neil & Richards, 2018). Breaking the cycle of nonteaching (Curtner-Smith, 2009), with a particular focus on SJE, requires the intentional recruitment of students whose backgrounds more closely mirror those of the students in their classes. An important research question is: What mechanisms would facilitate the recruitment of a more diverse group of preservice teachers into the physical education profession and how would programs adapt to accommodate this diverse group?

Teacher education programs should be positioned to help preservice teachers develop dispositions that align with social justice pedagogies (Walton-Fisette & Sutherland, 2018) as well as skills to implement what they have learned across a variety of school contexts (Baldwin, Buchanan, & Rudisill, 2007). One of the greatest challenges that new teachers face is feeling as if they are unequipped to work in diverse schools (Flory, 2016) while employing social justice pedagogies that empower students (Walton-Fisette & Sutherland, 2018). This represents a socialization challenge, and one that can be addressed through PETE programming. An important research question is: How can teacher education programs adapt their practices to engage with and better prepare preservice teachers to integrate social justice pedagogies into their teaching, and how can accreditation standards be adapted to support this shift?

Once working in schools, physical educators must be prepared to take leadership over how SJE is integrated into physical education (Walton-Fisette & Sutherland, 2018). This is particularly the case given that nuances amongst academic disciplines dictate that any innovation to instruction, such as the inclusion of an SJE focus, must center on the experiences of the teacher delivering that instruction along with the discipline they teach (Ball & Lacey, 2012). Nevertheless, schools represent custodial bureaucracies that can limit innovation and reinforce the status quo. Given that physical education has been traditionally constructed around team sports and multi-activity instruction (Ferry & McCaughtry, 2013), innovations that push the discipline in new and different directions may be met with resistance (Richards & Gaudreault, 2017). An important research question, therefore, is: What institutional and sociopolitical barriers exist that limit physical education teachers’ implementation of social justice pedagogies, and how can these barriers be overcome?

In addition to working with students from a variety of different backgrounds (Wenner & Campbell, 2017), teachers must also learn to navigate diversity within their ranks (Madsen & Mabokela, 2014). The role of teacher leaders, who are teachers “whose official schedule includes both teaching K-12 students and leading teachers in some capacity” (Margolis, 2012, p. 292) may be considered as a way to cultivate an increased focus on SJE in physical education. Teacher leaders can function in professional learning communities to influence student learning, encourage school improvement, inspire others to improve, and empower stakeholders (e.g., children, parents) to participate in educational innovation (Wenner & Campbell, 2017).
An important research question, therefore, is: What conditions enable in-service physical educators to be empowered as agents of change to take leadership in the promotion of social justice initiatives in their schools and communities?

**Curriculum, instruction, and assessment**

A quality physical education program that aligns with 50 Million Strong, SHAPE America standards, and grade-level outcomes should follow a teaching for learning approach (Mitchell & Walton-Fisette, 2016). This approach uses a four-step curriculum alignment. The SHAPE America (2014) National Standards and Grade Level Outcomes for K-12 Physical Education begin the process by providing a framework for teachers to understand what students should know and be able to perform at the end of each grade. Second, curriculum goals are established for each physical education program that align with the standards and outcomes and identify what students should be able to accomplish. Third, pedagogical models are often utilized as the framework for how teachers provide instruction. The final phase of the process is designing and implementing assessments that align with standards and curriculum goals, which can motivate students to learn, help teachers understand student learning, and assess program effectiveness. When using backward design (Lund & Tannehill, 2015), teachers begin with the outcomes/assessments at the onset of designing a physical education curriculum. When used in alignment, these four processes should lead students toward the overarching goal of physical literacy. However, to accomplish these goals, we need to be intentional in addressing SJE in our curriculum planning within a teaching for learning approach.

Curriculum can be defined as a social organization for knowledge of learning (Lund & Tannehill, 2015). In physical education, curriculum has mostly been studied in terms of models-based approaches (Metzler, 2011), which came about as a means to move away from the multiactivity model of instruction, where teacher-centered instruction in various sports dominated the rhetoric and were repetitive throughout a student’s learning experience (Kirk, 2010). Examples of some of the most prevalent models in the U.S. today include: (a) Skill Theme Approach, (b) Teaching Personal and Social Responsibility (TPSR), (c) Tactical Games Model, (d) Sport Education Model, (e) Fitness and Wellness Education, (f) Adventure Education, (g) Outdoor Education, and (h) Cultural Studies (Lund & Tannehill, 2015). Research on pedagogical models in contemporary physical education tends to focus on the effectiveness and fidelity of model implementation (Hastie & Wallhead, 2016; Kirk, 2013).

Although supported in the physical education literature, models-based approaches have recently been questioned with regard to their effectiveness for all students and in all situations. Landi, Fitzpaterick, and McGlashan (2016) reflected, for example, that “it is problematic to simply employ models in physical education without thought for the underlying principles, values, and orientations of any given model, and how these align (or not) with wider programmatic aims” (p. 407). Most pedagogical models align with the four learning domains in physical education (i.e., cognitive, affective, social, and psychomotor; Lund & Tannehill, 2015); however, it is unclear how teaching for social justice fits within most of these models. Landi et al. (2016) suggest that in order for pedagogical models to be adopted in physical education, care and consideration for context are essential. This leads us to our first-proposed research question surrounding curriculum in physical education: How do we effectively teach for social justice and successfully incorporate a models-based practice in physical education? Additionally, How does SJE “fit” within the design and implementation of each pedagogical model?

If teachers are to be expected to use pedagogical models effectively, than PETE programs should implement a teaching for learning approach using a variety of models, content, methods, and field experience courses (Metzler, 2011). Preservice teachers need to understand why models-based practice is important for K-12 learners and how physical education teachers might use a particular model in a given situation. For example, the TPSR model is often a model implemented with underserved youth in high poverty areas, because of the “need” of the students (Metzler, 2011). It is assumed that TPSR can provide students structure, values, and self-discipline, and that these skills not only will be used in the gym to help students self-regulate but also will transfer to help youth in other aspects of their lives (Lund & Tannehill, 2010). Nevertheless, it is important for preservice teachers to not stereotype their students and apply a model simply because they are working in an urban environment. Therefore, another research question that we propose moving forward in relation to curriculum and instruction is: How do we teach preservice and in-service teachers to consider the sociocultural context of their program and use this knowledge to choose pedagogical models that best aligns with the program goals?

Assessment helps teachers to know if students are meeting the standards and objectives, and in turn, working toward physical literacy (SHAPE America,
We define assessment as “a collection of evidence, where the matters of what to be assessed, who is to be assessed and how the assessment is to occur are acknowledged as social practices” (DinanThompson & Penney, 2015, p. 487). Although many teachers know that assessment is essential to improve teaching practice and students’ learning, many still assess based on components that are not aligned with standards, such as dressing out, participation, teacher observation, effort, and fitness testing (DinanThompson & Penney, 2015).

To help better prepare in-service and preservice teachers, SHAPE America (2019) released PE Metrics, which was designed to “provide teachers with tools for incorporating assessment into their programs on a practical and pragmatic level” (p. x). While this system can be a tool to help teachers integrate assessments into their programs, one shortcoming is that it does not explicitly consider varying social identities and sociocultural contexts of students, nor does it offer alternative assessments, such as peer- and self-assessment.

Recent literature surrounding assessment has focused on preparing preservice teachers to accurately and effectively assess students once they become in-service teachers (Collier, 2011). Understanding the importance of aligning assessments with standards and student learning outcomes is important when considering whether or not preservice teachers will carry out assessments properly in the field. Relatively, assessment literacy (Hay & Penney, 2013) is a four-phase framework to help preservice and in-service teachers better understand the process of assessment: (a) comprehension, (b) application, (c) interpretation, and (d) critical engagement. Having the knowledge and understanding of the different types of assessments is central in this model, but so is learning to effectively integrate assessment into physical education to motivate student learning as well as inform teaching practice. This includes being critical of “the contribution of assessment to the teacher’s power in the field and its impact on the social dynamics of the classroom field” (Hay & Penney, 2013, p. 77). Accordingly, our final research question related to curriculum and assessment is: How can PETE programs prepare preservice teachers on assessment literacy and how to consider sociocultural contexts and students’ social identities when developing and implementing assessments within their teaching practices?

**Technology as a tool in physical education**

Numerous digital technologies (DTs) are being used in physical education to analyze, monitor, record, assess, guide, and share learning through human movement (Koekoek & van Hilvoorde, 2018). Some emerging practices include: (a) new software and apps (e.g., Coach’s Eye, Dartfish Express, Video-Catch) that create easily understood, visual representations of student data and enhance the ability of teachers and students to analyze their performances, assess progress, and share insights; (b) ePortfolios that allow students to map and personalize progress over time and share with their family members; and (c) online learning management systems that support individualized programming with digital video instruction both in and out of class. All of these practices enable emerging “pedagogies of technology” that focus on students’ personalized learning trajectories, encourage ownership of their learning, and extend the learning of physical education outside of the class by promoting social communities around physical activities. Casey, Goodyear, and Armour (2017) argued that, based on the potential of “pedagogies of technology,” we need to ask questions about how the infrastructure of education can be changed to do things that were previously impractical and to make physical education accessible to all students regardless of ability and socioeconomic background.

While there is considerable growth in the number and type of technologies available to physical educators, there is limited research related to how these technologies are being used and whether they are optimizing student learning. Casey et al. (2017) found that DTs were allowing physical education teachers to enable students to actively map, visualize, analyze, and share their learning journeys in peer-to-peer settings. They also identified that participatory pedagogies enabled by DTs extended the influence of physical education, allowing students to access more information as they need it and create connections with their peers. In particular, participatory pedagogies provide a space for learners to actively create their own meaning through democratic processes enabled by DTs and by becoming co-creators of the curriculum and shaping their learning through active participation.

Taken together, DTs offer great potential in extending the influence of models-based instructional practices whilst decreasing the overt involvement by the teacher (Casey & MacPhail, 2018). However, there are also considerable challenges that physical educators encounter in learning the DTs and subsequently developing their pedagogical practices to create learning opportunities that are more inclusive (Casey et al., 2017). For example, access to technology outside of lesson time gives an advantage to students who have the DTs at home. As noted by Apple (2012), unless teachers address these inequalities through practices focused on collective learning and shared access to tools, uncritical application of technologies has the potential to foreground difference leading to further
marginalization. Thus, we propose the following research question: *What challenges do physical education teachers encounter when implementing DTs into their curriculum? How are DTs used to promote student learning by using more inclusive and participatory pedagogies?*

According to Shulman (1986), pedagogical content knowledge (PCK) is knowledge teachers use to translate subject matter to all students regardless of ability, race, gender, or socioeconomic backgrounds. However, the range of student abilities and motivations makes this a challenging process. As noted by Juniu (2011), the commitment in physical education to add technology to teacher knowledge frameworks has been advocated for over a decade extending from work in general education (Mishra & Koehler, 2006). Technological pedagogical content knowledge (TPCK) implies the ability to integrate technology to benefit all students’ learning, increase their capacity to engage in their education, and offer diverse options to meet specific learning needs (Mishra & Koehler, 2006). Accordingly, TPCK requires the teacher to have knowledge of what the technology can do, how the technology works, and how it would be used so that it “is adaptable to the characteristics of students and of the educational context” (Juniu, 2011, p. 41). The challenge with TPCK is to avoid “technocentric” thinking, but rather to use technology to benefit all students for meaningful teaching, learning, and assessment practices.

When considering TPCK, there is a need to understand how PETE programs help preservice teachers develop the skills needed to use technology effectively. Krause and Lynch’s (2018) review of U.S. PETE programs indicated that TPCK has not been fully addressed either in practice (i.e., used to promote more participatory pedagogies) or in program development. The lack of TPCK with instructors in PETE programs indicates that there is a need for targeted funding to enable the use of technology in relation to pedagogical content courses and field experiences, as well as the development of strategic curriculum mapping of where and when technology is incorporated across program coursework. Therefore, a key question that emerges in this section is: *How can teacher education programs model the use of TPCK to enable the next generation of physical educators to effectively integrate DTs within their pedagogical content knowledge whilst promoting diverse and inclusive learning experiences for all students?*

Another concern for physical educators relates to how DTs influence student learning about health and physical activity (HPA) indicators beyond physical education (Koekoek & van Hilvoorde, 2018). DTs can generate an array of rich media data on students’ actions that can include bodies videoed, images captured, movements and distances mapped, pulses measured, and weight recorded that can be used to promote physical competencies. Caution should be taken, however, as punitive overtones associated with DTs as a mechanism for making schools and students more accountable for public health outcomes could undermine the educational value of physical education (Gard, 2014). From an SJE perspective, students should be taught by teachers who know how to regulate the critical use of HPA indicators as informing diverse ways of being healthy, where students are taught how to emphasize their rights to use their data for educational gains in order to counter the oppressive messages of corporate bodies.

Rich and Miah (2014) note that if used uncritically, devices and apps that generate digital insights on students’ HPA can promote a form of healthism (i.e., an ideological, neo-liberal and public construct of health) that leads to obsessive behaviors or make students think they are fat and unhealthy. Without recognition of important and relevant differences between individuals, DTs present information in ways that appear scientific, but are actually simplistic indicators of complex health issues. Physical educators need to develop digital literacy skills with DTs so that they can promote students’ understanding of HPA data. In particular, teachers need to educate students so that they can control and navigate how their HPA data can be shared through social media that simultaneously personal and public and creates a powerful digital footprint. Ethically, we need to consider the HPA data students should or should not share and what happens to whatever is shared to promote learning. As such, we ask: *How can physical educators use DTs to enhance students’ HPA learning whilst guiding them to critically navigate cybersphere, interpret oppressive messages, resist obsessive messages promoted by corporate messages and control the use of their data for educational purposes?*

### Continual professional development

Throughout their careers, most teachers will likely experience a wide variety of professional development activities designed to improve practice and student learning outcomes (Darling-Hammond & McLaughlin, 1995). In physical education, however, there are limited opportunities for teachers to participate in relevant, free, subject-specific continual professional development (CPD; Deglau & O’Sullivan, 2006). Further, when teachers participate in traditional CPD it is usually as passive recipients through school-based in-service days, conference attendance, structured workshops, and university courses (Parker & Patton, 2016). More recently, however, research has emphasized...
We recognize it is a significant step to begin to explore PE-CPD to provide evidence that ties CPD efforts to teachers’ use and implementation of new knowledge and skills that promotes student learning for all. Simultaneously, this raises the question of not only what are the most effective methods in facilitating PE-CPD for in-service teachers, but what about CPD for PETE faculty members? PETE faculty members play a key role in preparing future teachers with the knowledge and skills to become effective practitioners. Thus, we question whether PETE faculty members are aware of the changes taking place in the K-12 school environment, particularly related to issues of SJE. We argue that PETE faculty members face several challenges in the current educational landscape as it pertains to PE-CPD. First, we need to consider whether PETE faculty members have access to and support for their own PE-CPD that will allow them to stay current on critical issues and research affecting both in-service and pre-service teachers. Second, assuming PETE faculty members are actively engaged in PE-CPD, are they able to implement this new knowledge and pedagogies into their PETE programs? These primary roles may include the following: the development of new knowledge through research and scholarship, involvement in advancing such knowledge through publications, presentations, and the facilitation of PE-CPD with in-service teachers, and the development of PLC’s with colleagues to guide coherent implementation in PETE program offerings. Therefore, we propose this research question: How are PETE faculty members receiving PE-CPD in relation to their practice as teacher educators and what is their capacity to promote social justice pedagogies in their PETE programs?

Discussion and concluding remarks

Throughout this article, we explored future research considerations and pedagogical opportunities that connect to the 50 Million Strong goal in the area of physical education (SHAPE America, 2015) related to four topics: (a) occupational socialization, (b) curriculum, instruction and assessment, (c) technology and (d) professional development. These focus areas were situated within the adapted SEF (Castelli & van der Mars, 2018) and framed around an SJE agenda to inform the direction as to where we believe research in PETE and physical education needs to be explored. We argue that SJE needs to be central across physical education standards, curricula, and policies to accomplish the goal of providing quality physical education for all 50 million school-aged children in the U.S. Specifically, the historical, political, and social contexts, along with students’ social identities and lived experiences
must be considered. While most of our arguments were guided by the U.S. context and framed by relevant national initiatives, we believe there to be international relevance across the four topical areas identified, and to SJE.

In each of the four research areas, a brief review of literature was provided and proposed research questions were developed. We acknowledge that the literature is not exhaustive and that the research questions are broad in nature; however, we encourage the reader to develop detailed and specific research questions that cuts across research paradigms and diverse contexts. Further, although these areas were discussed separately, they are actually quite interrelated. For example, to implement the suggestions provided for PE-CPD (i.e., based on teachers’ needs, ongoing and sustained, focus on implementation of new knowledge and skills and student outcomes), changes would need to occur with how PETE faculty members and physical education teachers are socialized in both higher education and K-12 contexts. Another example is how the fast-growing emphasis on DTs will continue to have implications for how physical education teachers develop their curriculum, select and implement appropriate pedagogies and instructional methods, develop PLC’s both in person and online, and establish assessment practices that measure student learning across the four learning domains.

The most salient connection across the focus areas is a unified call for SJE to be integrated into our PETE doctoral and teacher licensure programs as well as K-12 physical education curricula. Notably, SJE is not a central focus in the Initial PETE Standards (SHAPE America, 2017) and the National Standards and Grade-Level Outcomes for K-12 Physical Education (SHAPE America, 2014). As such, current PETE faculty members and K-12 teachers will likely need to engage in PE-CPD that focus on SJE, particularly on how to formulate a socially just curriculum and engage in pedagogical practices that explicitly focus on educating students about social justice issues. The hope is that once SJE is a central focus in our physical education curricula at the higher education and K-12 levels, doctoral students, PETE faculty members, preservice teachers, and inservice teachers will be socialized on how to teach for and about SJE. This paper argues for education reform that identifies social justice as a central component of physical education standards and policies (Richards et al., 2018). For an education movement that emphasizes SJE to occur, meaningful revisions are needed with the current Initial PETE Standards (SHAPE America, 2017) and the National Standards and Grade-Level Outcomes for K-12 Physical Education (SHAPE America, 2014). As our children and youth within our public schools continue to become more diverse, we want to be at the forefront of constructing socially just curricula and movement spaces that provides opportunities for students to be actively engaged in their physical education learning experiences through critical reflection and deconstruction as they relate to power, privilege, and oppression.

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