



Toward an Integrative Model for Teacher Change in Physical Education

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ABSTRACT

Teacher change in physical education has long been called for; however, current theoretical models guiding the change process do not address contextual aspects of the teaching workplace. Occupational Socialization Theory (OST) addresses contextual factors related to change but omits individual teacher characteristics that develop independently of socializing factors. To better understand the teacher change process and guide reform efforts such as continuing professional development, a more comprehensive model is required. The purpose of this article, therefore, is to propose an integrative model of teacher change that merges OST with research on teacher dispositions toward change, including related behavior change theories. Practical applications for teacher professional learning utilizing the model and future directions are suggested.

KEYWORDS

Socialization; dispositions; self-efficacy; innovativeness; continuing professional development

Although the mission of physical education tends to shift across time and in relation to social and cultural norms (Kirk, 2010), there is a general consensus that the field seeks to prepare *P*-12 students with the knowledge and skills that enable a lifetime of physical activity (McEvoy, Heikinaro-Johansson, & MacPhail, 2017). The Society of Health and Physical Educators (SHAPE) America (2017) uses the term *physical literacy* or “the ability, confidence, and desire to be physically active for life” (Farrey & Isard, 2015, p. 9) to describe the principal outcome of physical education. Nevertheless, decades of research demonstrate that some physical education teachers continue to embrace traditional practices that do not support the development of physical literacy for all students (Lee, Burgeson, Fulton, & Spain, 2007; Rink, 2014; Williams, 1996). To address this challenge and meet the current demands of the physical education profession, teachers are urged to change from using traditional teaching practices that are inconsistent with effective practice (Kretchmar, 2006) and adopt those that are better aligned with promoting lifelong health and engagement in physical activity (McKenzie & Lounsbery, 2014; Rink, 2014).

Teacher change is a term commonly used to describe the process of pedagogical change across a variety of contexts (Guskey, 2014). Teacher change has been studied relative to continuing professional development (CPD; Guskey, 2002), research interventions (Belansky, Cutforth, Kern, & Scarbro, 2016; Ward, Doutis, & Evans, 1999), and school

reform efforts (Fullan, 2014; Kennedy, 2005). Generally, this work seeks to promote positive outcomes for students, as teacher quality has consistently been shown to be the most important factor affecting educational quality (Carey, 2004; Ward, Kim, Ko, & Li, 2015). There exists, however, little in the way of a comprehensive theory to specifically guide efforts to promote physical education teacher change through professional learning (Kohl & Cook, 2013).

The literature related to Occupational Socialization Theory (OST) addresses how physical educators develop and enact beliefs through interactions with socializing agents such as students, teachers, coaches, and teacher educators (Richards, Templin, & Graber, 2014). These beliefs, or *subjective theories* (Grotjahn, 1991), develop during recruits' formative education and are further shaped through initial teacher education and while working as inservice teachers in schools (Richards, Pennington, & Sinelnikov, 2019). The beliefs physical education teachers form as a result of socialization also impact their perception of barriers to and facilitators of making pedagogical change; therefore, OST can help to guide efforts to promote professional learning and teacher change. Despite its usefulness in understanding how teachers are socialized into, make sense of their workplace environment (Templin & Schempp, 1989), and attempt pedagogical change (Kern, Graber, Woods, & Templin, 2019), OST largely neglects the individual characteristics of teachers that develop independent of their socialization experiences. For that reason, the study of teacher change should also include a focus on individual teachers.

The individual characteristics of teachers related to their beliefs are described as *dispositions* (Diez & Rath, 2007; Schussler, 2006; Splitter, 2010). Three dispositions considered to have a particularly strong influence on inservice teachers' propensity toward making pedagogical change include their (a) relative satisfaction with the program in which they are teaching (Kern & Graber, 2017; Shaw, Davis, & McCarty, 1991); (b) confidence or self-efficacy to attempt change (Cothran, 2001; Kern & Graber, 2017); and (c) willingness to adopt new teaching techniques, often referred to as *innovativeness* (Bechtel & O'Sullivan, 2007; Goldsmith, 1986; Kern & Graber, 2017). Collectively, these dispositions reflect teachers' beliefs about the educational process (Murrell, Diez, Feiman-Nemser, & Schussler, 2010), including what to teach and how to do so effectively (Goddard, Hoy, & Hoy, 2004). Additionally, each of these dispositions is associated with behavior change theories such as Shaw and colleagues' (Shaw et al., 1991) cognitive framework for teacher change, Social Cognitive Theory (SCT; Bandura, 1989), and Diffusions of Innovations Theory (Rogers, 2003). These dispositions toward change predict teaching behaviors (Vanatta & Fordham, 2004), as well as the propensity for pedagogical change (Kern & Graber, 2017; Kern et al., 2019); however, the literature does not account for how an individual's current teaching context and prior socialization may influence them to change or resist change over time.

While the literature on OST and teacher dispositions can help scholars to better understand teacher change, it is somewhat limited in scope. Specifically, research has not addressed how to promote pedagogical change through professional learning. Although OST effectively explains the socializing influences on teachers, it mostly excludes the individual characteristics of teachers. Further, the study of teachers' dispositions without considering context fails to account for the external influencers such as socializing agents that impact teachers' efforts to make changes to their programs. Therefore, the purpose of this article is to propose an integrative model of teacher change in physical education that integrates OST with dispositions toward change and related change theories. Additionally,

practical applications of the proposed integrative model in teacher professional learning are suggested, as well as future directions of study.

Teacher socialization and change theories

Occupational socialization theory seeks to describe how individuals are recruited into, prepared for, and socialized throughout their careers (Richards & Lux Gaudreault, 2017; Templin & Schempp, 1989). The theory assumes that socialization is a dialectical process in which individuals are active agents in their own socialization, with the ability to resist the force of socializing agents and institutions seeking to socialize them (Graber, Killian, & Woods, 2017; Richards, Templin, & Gaudreault, 2013; Schempp & Graber, 1992). This contrasts with the previously accepted functionalist perspective of socialization in which it was assumed that individuals were passive bystanders in their own socialization (Merton, Reader, & Kendall, 1957). Socialization, however, is not a passive or linear process experienced in universal sequence (Lawson, 1986), rather it is dynamic and occurs throughout all phases of an individual's life (Richards et al., 2019).

Acculturation, or pretraining, occurs during the formative educational experience (Curtner-Smith, 2017). Potential teaching recruits engage in an apprenticeship of observation (Lortie, 1975) throughout their *P-12* education in which interactions with their own teachers, coaches, and other socializing agents lead to the development of initial understandings or subjective theories related to what it means to teach physical education (Richards et al., 2013). Grotjahn (1991) defined subjective theories as “complex cognitive structures that are highly individual, relatively stable and enduring, and fulfill the task of explaining and predicting such human phenomena as action, reaction, thinking, emotion, and perception” (p. 188). Many recruits experience physical education classes that focus on team sport content delivered using traditional, teacher-centered pedagogies (Ferry & McCaughtry, 2013; Flory, 2016). Accordingly, these recruits are likely to equate physical education with sport and direct teaching styles, and when they enter the field as prospective teachers, they are inclined to embrace this form of pedagogy. Since physical education in the United States is dominated by a sport-oriented approach to teaching, many who elect to enter the field support this form of curriculum and are less likely to be open to alternative curricular approaches introduced during physical education teacher education (O’Neil & Richards, 2018).

Once recruits make the commitment to pursue a career in physical education by enrolling in a college or university PETE program they transition into *professional socialization* (Graber et al., 2017). The overarching goal of PETE is to prepare preservice teachers with the knowledge and skills to teach effectively. Despite examples of effective programs that have successfully altered preservice teachers’ subjective theories (Graber, 1996), many future teachers exercise their sense of agency and resist the socialization process (Richards et al., 2014). Since faculty, however, hold greater power, resistance is more likely to be covert and take the form of strategic compliance (Lacey, 1977).

When individuals transition into their first teaching position they enter *organizational socialization* (Woods & Lynn, 2014). Schools have been described as custodial bureaucracies (Lawson, 1988) whereby power is associated with tenure and years of teaching experience. This promotes the perpetuation of the status quo through an *institutional press* (Zeichner & Tabachnick, 1983), where senior teachers promote conformity to current beliefs and

practices (Curtner-Smith, 2009). This is a challenge for PETE programs because even if they are effective in helping recruits redefine their subjective theories and adopt more innovative orientations (Curtner-Smith, 2017), school cultures may not support innovation. Although some new teachers who are innovative take actions that actively attempt to strategically redefine the school culture (Lacey, 1977), strategic redefinition can be precarious as it involves confronting the status quo and those who hold power. Therefore, it is more common that new teachers internally adjust and adopt the school's values (Lawson, 1983) or furtively teach according to their own beliefs while isolated from teaching colleagues (Kern et al., 2019). In cases where new teachers adopt to school cultures that are incongruent with lessons learned during PETE, the influence of PETE can appear to be washed out (Zeichner & Tabachnick, 1981).

Custodial school environments are likely to present suboptimal working conditions such as subject marginalization (Laureano et al., 2014; Lawson, 2018), which can make adopting innovative teaching strategies difficult. Teachers are implicitly and/or explicitly told that they and the subject of physical education do not matter (Richards, Gaudreault, & Woods, 2018). This is manifested through large class sizes, limited equipment and facilities, and the prioritization of other school functions over physical education. Physical educators may internalize this marginalization and believe their subject is unimportant or valuable only when supporting other school subjects such as planning time for classroom teachers (Richards, Gaudreault, Starck, & Woods, 2018). These circumstances can lead physical educators to neglect quality practices and equate their role as being a manager of activities (Henninger & Coleman, 2008; Placek, 1983) as opposed to facilitator of student learning (Kretchmar, 2006).

Although physical education is marginalized in many schools, others present a more innovative culture with optimal working conditions (Lawson, 2018; Richards et al., 2018a), and where adopting new and innovative practice is more feasible for all teachers. In these environments, physical education is viewed as an integral component of a holistic education, and physical educators are considered central to the school mission (Pennington, Prusak, & Wilkinson, 2014). Such cultures increase the extent to which teachers believe in the academic purpose of physical education and feel their discipline matters to others (Richards et al., 2018a). This can create a greater sense of belonging (Gu & Day, 2007; Henninger, 2007), increased resilience to stressors (Ellison & Woods, 2016), and more directed focus on student learning outcomes (Bulger & Housner, 2009). Teachers who work in more innovative and supportive environments more readily accept change (Kern et al., 2019), are less likely to leave teaching prematurely, and more likely to pursue professional growth opportunities (Lawson, 2018) such as CPD.

Teacher beliefs and subjective theories

Although OST offers a detailed explanation of how teachers' subjective theories are developed and continuously reshaped over time, it is also important to understand the role of teachers' beliefs about teaching and learning related to their pedagogical practices. The literature depicts teacher beliefs as a "messy construct" due to inconsistencies in defining and operationalizing terms (Fives & Buehl, 2012). Thus, a set of working definitions for the purpose of this article have been developed (see Table 1). While philosophies about beliefs vary, in this manuscript, beliefs are distinguished from subjective theories because beliefs

Table 1. Definitions of related terms.

Term	Definition
Belief	Overarching and central truth about the purpose of education within a content area that individual teachers possess.
Subjective theory	An understanding of educational phenomenon that stems from an overarching belief about the educational process and requires no confirmatory evidence to perpetuate.
Dispositions toward pedagogical change	The filter through which thoughts and behaviors related to changing teaching practices are framed, representing a measurable embodiment of belief about changing a particular educational process.
Value orientation	A value placed on specific curricular and instructional decisions based on a belief about the importance of various aspects of education and the purpose of education.
Continuum of innovation	A continuum where at one end individual teachers are custodial and slow to accept new ideas about teaching, and on the other end, are innovative and willing to accept new ideas and ways of teaching.

Note: Definitions offered here represent a synthesis of definitions from numerous authors and are an attempt to distinguish terms as they apply to understanding teacher change.

are overarching and central, whereas subjective theories are born from beliefs (Fives & Buehl, 2012). For example, if a teacher believes competitiveness is an important life skill, a corresponding subjective theory might be that competition during physical education class will enhance competitive desire. Alternatively, teachers who believe lifelong physical activity is an important physical education outcome may hold the subjective theory that increased physical activity during class results in a greater desire to be active outside of school. These subjective theories are as stated, subjective, and not always supported with evidence beyond personal experience. They are demonstrated in decisions about what (i.e., curriculum) and how to teach (i.e., pedagogy) in a given content area (Fang, 1996; Pajares, 1992). Teacher beliefs also form the basis for program and instructional decisions (Kennedy, 2005), and influence what students learn from the curriculum (Fullan, 2007; Guskey, 2002; Tsangaridou, 2006).

Teachers' beliefs about teaching are also central to their understanding of the purpose of education within their content area and predictive of how they approach instruction (Lumpe, Czerniak, Haney, & Beltyukova, 2012; Martin, Kulinna, Eklund, & Reed, 2001; Stipek, Givvin, & Salmon, 2001). Beliefs about teaching and learning begin developing in early childhood and predict teaching practice, and they have strong implications related to willingness to make pedagogical change (Fives, Lacatena, & Gerard, 2015). The relationship between beliefs and change has been discussed in the literature (Buehl & Beck, 2015) and demonstrated across content areas, including science (Lumpe et al., 2012), language arts (Phipps & Borg, 2009), mathematics (Cross, 2009), and technology (Ertmer & Ottenbreit-Leftwich, 2010).

In physical education, Bechtel and O'Sullivan (2007) indicated that teachers' beliefs and visions about quality physical education promoted instructional change, and Cothran (2001) reported that teachers' beliefs about the importance of physical education prompted the adoption of a new health-related fitness curricular model. In contrast, beliefs may inhibit change if they are sufficiently strong and teachers perceive change to be unnecessary (Meek & Curtner-Smith, 2004). For example, Ennis (1994) suggested that teachers' beliefs may be obstacles to innovation and result in the rejection of new knowledge that might change current practice. Despite the strong association among beliefs, practice, and change, some researchers have observed incongruence between teachers' stated beliefs and their demonstrated pedagogical practices, suggesting that beliefs and practice do not perfectly

align. For example, Lee (2009) found that a mismatch existed between language teachers' beliefs related to student written work and the feedback they provided, and Kulinna and colleagues (Kulinna, Silverman, & Keating, 2000) noted that beliefs about physical activity and fitness did not accurately predict whether physical educators would promote physical activity. Some of these inconsistencies may be attributable to socialization challenges related to a lack of preparation to put beliefs into action and suboptimal working conditions that limit innovation.

Despite some notable instances of incongruence, teachers tend to implement practices consistent with their beliefs about what and how students should learn (Fives & Buehl, 2012), and their beliefs can serve as both barriers to and facilitators of teacher change (Kern et al., 2019). In large measure, teacher socialization is a barrier to teacher change because beliefs developed during childhood are strong and difficult to alter. It stands to reason that if children are exposed during physical education to teachers who lack innovation, they will be resistant to innovation and change once they become teachers. Furthermore, if teacher education has a weak impact and teachers enter work settings under suboptimal conditions that discourage innovation, they will be less amenable to change. A critical aspect of teacher change, therefore, is challenging dysfunctional teacher beliefs developed during early socialization so subsequent changes in practice may be realized in ways that promote good practice.

Teacher dispositions toward change

Teacher dispositions are defined as, "a point of convergence, representing a filter through which thinking and behaviors related to teaching are framed, and a point of inception, from which knowledge and behaviors emanate" (Schussler, 2006, p. 251). Though related to beliefs, dispositions are distinct in that they are an embodiment of beliefs and reflective of teachers' subjective theories about education and their role as a teacher (Murrell et al., 2010). Dispositions toward pedagogical change are also regarded as an outward reflection of teachers' beliefs and have been shown to be predictive of changes to teaching practices (Kern & Graber, 2017; Vanatta & Fordham, 2004). Unlike beliefs, however, dispositions are more concrete in nature (Splitter, 2010), and thus less likely to show incongruence with teaching practice (Wasicsko, 2007). For example, physical education teachers who believe physical literacy is an important program outcome may possess a disposition of dissatisfaction with school schedules that only offer physical education once per week to students, as opposed to the daily participation in physical education class that is widely recommended (Centers for Disease Control and Prevention, 2013). Dispositions that develop as a result of beliefs impact teachers' decisions to initiate and make pedagogical change (Kern et al., 2019). Therefore, those attempting to facilitate teacher change should consider the dispositions of teachers toward the change process. In particular, three dispositions have been identified that reflect the ways teachers consider the necessity of change, along with their perceived ability to successfully implement change (Bechtel & O'Sullivan, 2006; Kern & Graber, 2018).

Program satisfaction

First, the disposition of relative satisfaction with current programming reflects a teachers' belief about the necessity of change (Maskit, 2013) and becomes foundational for change to

be initiated or attempted (Kern & Graber, 2017). Shaw et al. (1991) called teachers' relative dissatisfaction with the status quo of their programs *perturbation* in their Cognitive Framework for Teacher Change and suggested that all pedagogical change originates from perturbation or low program satisfaction. Perturbation, in this theoretical framework, is seen as a prerequisite for all change to be initiated, and without it, other influences on change are inconsequential because a threshold of dissonance, so to speak, has not been achieved (Shaw et al., 1991). According to Shaw and colleagues, in addition to lacking program satisfaction, teachers must also envision how to enact change and assess their commitment to attempting change (Shaw et al., 1991) in order for change to be possible. Program satisfaction is also indirectly acknowledged in teacher change theories that focus on teacher professional learning such as Guskey's (2002) Model of Teacher Change, Clark and Hollingsworth's (2002) Model for Teacher Professional Growth, and Whitworth and Chui's (2015) Model for Studying the Effects of Professional Development. A commonality among these models is the contention that the effectiveness and sustainability of any professional learning are predicated on the degree to which teachers are satisfied with the resulting student outcomes following their implementation of new teaching practices that were taught to them through CPD.

Self-efficacy to change

Teachers' self-efficacy to attempt and initiate change is a second disposition toward the change process and reflects teachers' confidence in their own knowledge, skills, and abilities to successfully make pedagogical change. The concept of self-efficacy is broadly described by Bandura (1995) as the "belief in one's capability to organize and execute the courses of action required to manage prospective situations" (p. 2). Self-efficacy is one part of Social Cognitive Theory (Bandura, 1989), which predicts and explains human behavior, including changes to learned behavior patterns. Commonly referred to interchangeably with confidence, self-efficacy to make behavior change depends greatly on an individual's knowledge and skills to make sustainable change, as well as their outcome expectation or belief that the change will be an improvement to current behavior or practice (Bandura, 1994).

Research has shown that teachers with higher overall self-efficacy are more open and willing to change teaching practices as a result of professional development initiatives (Tschannen-Moran & McMaster, 2009) and possess stronger self-efficacy toward making self-initiated pedagogical change (Skaalvik & Skaalvik, 2007). Among physical education teachers, general teaching self-efficacy has been associated with the adoption of an evidence-based physical education curriculum (Martin, McCaughtry, Hodges-Kulinna, & Cothran, 2008), and is considered necessary for attempting pedagogical change. Kern and Graber (2017) demonstrated that physical education teachers' self-efficacy, specifically in relation to the change process, is a disposition that helps explain past attempts at pedagogical change and predicts the likelihood to initiate change in the future. Lack of self-efficacy may be a limiting factor for making successful change, particularly when socialization influences and workplace factors reduce teachers' confidence to initiate and attempt change (Curtner-Smith, 1999).

Willingness to change

Willingness to change and adopt innovative practices such as new teaching strategies is a third impactful disposition toward change and has been referred to somewhat

synonymously with the term, *innovativeness*. Innovativeness as a disposition toward change was originally studied by Rogers (1962, 2003) as part of the Diffusions of Innovation theory in reference to how new and innovative ideas are processed and communicated throughout social systems. Education researchers have been able to predict teacher behavior change, including changes to pedagogy and instructional strategies, based on teachers' innovativeness (Century & Cassata, 2016). In particular, willingness to change (innovativeness) has been shown to predict change as demonstrated by researchers who have investigated the integration of technology into the classroom (Vanatta & Fordham, 2004), differentiation and assessment (Cassata, Kim, & Century, 2015), and information technology (Yang & Huang, 2008). In physical education, willingness to change was emphasized as an important disposition related to change (Kern & Graber, 2018), including adapting to the change process (Rovegno & Bandhauer, 1997), adopting new curriculum (Bechtel & O'Sullivan, 2007), and challenging custodial colleagues about appropriate instruction (Williams & Williamson, 1998).

Integrative model for teacher change

For decades, scholars in physical education have called for reform (Kretchmar, 2006; Placek, 1983; Rink, 2014), yet efforts to encourage teacher change and enhance teaching effectiveness have not been highly successful (Lee et al., 2007). Models of teacher change are described in the literature (Clarke & Hollingsworth, 2002; Guskey, 2002; Shaw et al., 1991; Whitworth & Chiu, 2015), but they consider factors such as teaching context, socialization, or teacher beliefs and dispositions separately. While currently available teacher change models provide structure for some aspects of reform, a more comprehensive model is needed. Therefore, an integrative model of teacher change, one that offers a framework for the design of initiatives targeting reforms such as the alteration of teachers' pedagogical practices, including the use of curricular resources, teaching strategies, and assessment of student learning, is proposed in this manuscript.

In the integrative teacher change model presented in this manuscript (see Figure 1), the concept of teacher socialization as a lifelong process (with different phases) provides an umbrella framework for diagramming how beliefs and subjective theories are developed and evolve over time. The socialization process is ever-present, beginning when teachers are students in observation of their own teachers, followed by teacher education, and continuing to long term on-the-job socialization. Socialization, therefore, is constant and represents all of the external influences that shape teachers' subjective theories about what the purpose of physical education is (Richards et al., 2013), as well as how they perceive their roles as teachers (Richards, 2015). Teachers' subsequent beliefs about what and how to teach (curriculum and pedagogy) are determined in large part by this socialization; however, since teacher socialization is a dialectic process (Graber et al., 2017), these beliefs also reflect teachers' own sense of agency. For this reason, teacher beliefs are considered to be an individual teacher characteristic and an internal determinant of pedagogical change in the proposed integrative teacher change model.

Also proposed in this model is the notion that dispositions toward the change process have a direct effect on change by engaging teachers in professional learning and are the teacher characteristics most proximal to actual pedagogical change. The direct link between dispositions toward change and observable teacher pedagogical change is an important

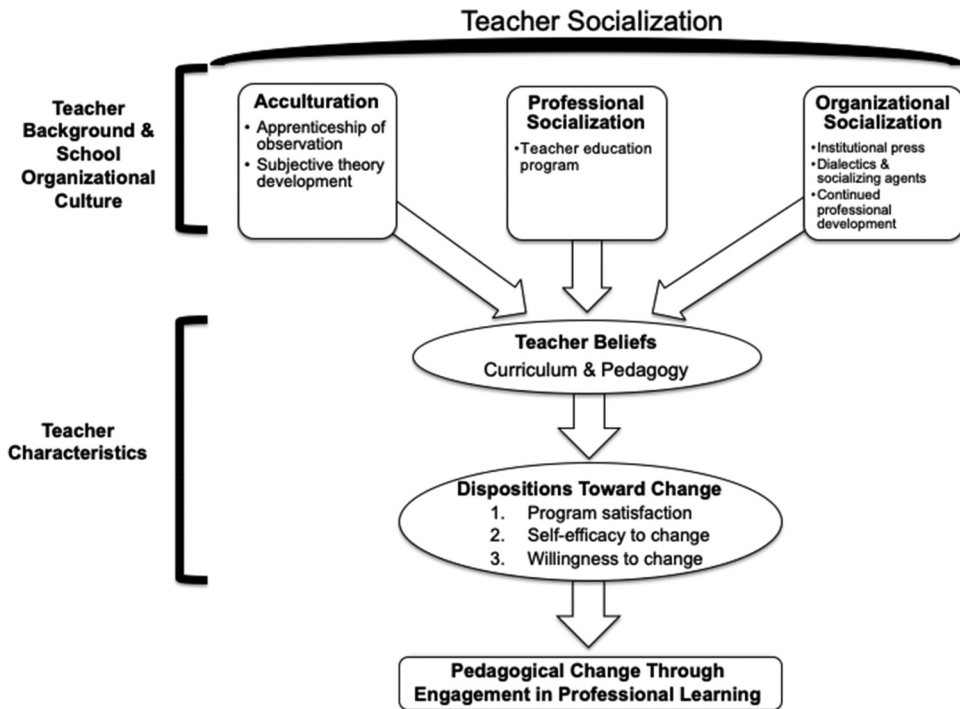


Figure 1. Integrative teacher change model.

aspect of the design of teacher change initiatives, as each of the three dispositions toward change present in the model (e.g. program satisfaction, self-efficacy to change, and willingness to change) have direct evidence of resulting in an increased likelihood of teachers attempting and initiating pedagogical change in a variety of teaching contexts and content areas. Importantly, teacher dispositions toward change are largely determined as a result of the nature of their beliefs and subjective theories, and ultimately dictate whether the change is enacted. Additionally, dispositions toward change are part of the individual psyche, and therefore impact dialectical exchanges that teachers engage in with socializing agents (Graber et al., 2017). In this way, dispositions are important to consider within the social context of schools and potential CPD initiatives. In the figure, beliefs are centered above dispositions because they influence dispositions to change, specifically as dispositions relate to perceptions about program satisfaction (the need for change), self-efficacy to change, and willingness to change or adopt innovation (Kern et al., 2019).

Due to the concreteness and measurability of dispositions, their consideration in the design of reform efforts such as CPD could vastly increase the chance of success and potentially allow for the strategic design of interventions to produce teacher pedagogical change. Since dispositions toward change included in the model are considered to be highly representative of beliefs about the educational process, their measurement provides insight into teachers' deep-seated understandings about education that may need to be challenged through reform efforts. Challenging long-held beliefs can lead to more sustainable change, which is fundamentally the goal of most attempts at reform, including CPD (Fullan, 2014). Additionally, since teacher beliefs are a result of ongoing socialization, treating teachers'

dispositions toward change as an entry point may enable a process whereby both teachers' internal and external barriers to and facilitators of change are identified and attended to through individually targeted CPD efforts.

Past approaches to change and reform

Pedagogical change and reform are typically attempted through the CPD process (Fullan, 2014), which is most commonly administered in a *top down* manner where it is prompted or mandated by external players such as administrators, researchers, or legislators (Richardson, 2003). Top-down approaches have been criticized as ineffective in promoting sustained teacher change because they usually fail to garner teacher support or consider the unique circumstances or characteristics of teachers (Fullan, 2007; Richardson, 1998). One-day inservice events often fail to adequately communicate a vision (e.g., what and why) of proposed changes (Roberts & Pruitt, 2009) or ensure the acquisition of new skills (Fraser, Kennedy, Reid, & McKinney, 2007). They commonly employ a top-down approach, lack resources to successfully implement change (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009), and/or do not provide ongoing support to ensure the sustainability of change. Even when teachers accept the ideals and changes being asked of them, they may resist or feel incapable of making proposed changes because they do not believe the changes can be successfully implemented in their classes (Guskey, 2002). This aspect of top-down change is magnified for physical education teachers, as they receive considerably less CPD specific to their field than classroom teachers (Whipp, Tan, & Yeo, 2007), and are often asked integrate pedagogical strategies designed for classrooms, as opposed to strategies appropriate for the active spaces in which they teach (Armour & Yelling, 2007; Kohl & Cook, 2013). In these situations, physical educators may be skeptical of professional development initiatives that do not adequately address their specific needs or reference the realities of teaching their specific subject (Richards & Templin, 2011).

It has been argued that authentic, effective, and sustainable change only occurs when teachers self-initiate change from the *bottom up* (Richardson, 1990). This type of change is advocated for because of the degree of autonomy teachers have in instructional decision-making (Hargreaves & Fullan, 2012), and their tendency to adhere to changes they perceive to be effective in achieving self-determined goals (Kennedy, 2005). Research among classroom teachers indicates that approximately 75% of all pedagogical change is initiated by teachers (Kennedy, 2005; Maskit, 2013), suggesting that bottom-up change is the primary means by which teachers make changes in their practice. In physical education, it was estimated that pedagogical change is self-initiated 83% of the time (Kern & Graber, 2018), and it has been speculated that this slightly larger percentage may be the result of the physical and intellectual isolation within schools for physical educators (Whipp et al., 2007), along with their relative lack of inclusion in school accountability measures of student achievement (Kohl & Cook, 2013).

Although CPD is recognized as important to reform efforts and improved student learning, its administration in schools has been characterized as “woefully inadequate” due to an overreliance on short-term workshops with only superficial learning, little follow-up, and top-down delivery (Borko, 2004). Research highlighting the results of successful CPD suggest a more comprehensive approach in which both top-down and bottom-up strategies are necessary in order for CPD to result in sustained teacher change and improved

student outcomes (Kennedy, 2016). In this way, bottom-up acceptance of CPD initiatives can be cultivated while also maintaining top-down support. For example, Ward et al. (1999), were successful in reforming teacher's instructional practices in part by successfully communicating the vision of the *Sabertooth* project and providing ongoing and collaborative learning. Likewise, Belansky et al. (2016) showed over a two-year period that teachers changed from employing traditional practices to those more consistent with health-optimizing physical education (HOPE; Metzler, McKenzie, van der Mars, Barrett-Williams, & Ellis, 2013) through the provision of multiple-day workshops, the acquisition of appropriate curriculum and equipment, and ongoing technical support from master teachers. Even these exemplary initiatives, however, were unable to fully recognize and adapt to the individual characteristics of teachers, thus opportunities to individualize and customize CPD deliverables were lost. It is argued in this manuscript that an integrative approach in the design of CPD may enable even greater success for future CPD efforts.

Applying an integrative model in the strategic design of CPD

Kennedy (2014) contends that CPD offered in schools typically falls somewhere on a continuum. On one end is *transmissive*, characterized by top-down delivery that promotes teacher compliance rather than autonomy, and on the other end is *transformative*, described as promoting teachers' internalization of concepts and awareness of context. While transformative CPD is best aligned with teacher change, this approach rarely addresses teacher beliefs about the need for change, which varies among teachers (Hoban & Hoban, 2002; Maskit, 2013). In particular, CPD often neglects to address how prior socialization influences teachers' dispositions toward change. Therefore, it is argued here that an integrative approach, in which teacher socialization and resulting beliefs and dispositions are considered in the design of transformative CPD, may provide a more successful CPD outcome (see Table 2 for three hypothetical teacher profiles and corresponding potential customized CPD approaches). The integrative approach proposed may also represent the best design for successful CPD outcomes because it combines the theoretical perspectives of OST, Social Cognitive Theory, and Diffusions of Innovation, as well as accepted teacher change models (Fullan, 2014; Guskey, 2002; Shaw et al., 1991).

Measurement for strategic design

By using a variety of instruments to measure teacher dispositions toward change, as well as factors related to socialization (e.g., background experiences), it is possible to better understand teacher beliefs and associated subjective theories (Richards et al., 2013). Contextual factors that influence the occupational socialization experience, such as marginalization, perceived mattering, stress, and burnout, can also be measured and the results used to strategically design aspects of CPD to meet the individual needs of teachers. This approach would go a long way to ensure that when teachers are presented with CPD, it effectively engages them in learning opportunities and professional growth as needed. For example, autobiographical essays, in which individuals reflect on their prior socialization, have been used to better understand teachers' backgrounds (Betourne & Richards, 2015), and surveys, formal and informal interviews, and observations have also provided excellent mechanisms for helping researchers to better understand OST. A number of validated instruments are currently available such as the

Table 2. Profiles of teachers with different dispositions toward change and possible customized CPD focus areas.

Teacher disposition toward change profile	Customized CPD foci
Low satisfaction with current program Low self-efficacy to change program High willingness to adopt innovative practices <u>Sample teacher statement</u> “I want to change, and I have a lot of new things I would like to try, but there is a lot standing in my way.”	Implementation Adequate communication of CPD vision followed by deliberate actions designed to develop knowledge, skills, and outcome expectation for implementing pedagogical changes recommended during CPD. Provision of needed resources such as curriculum, equipment, and follow-up support. Identify social and contextual barriers that may prevent adoption of innovative practice and offer strategies to mitigate or work around.
Low satisfaction with current program High self-efficacy to change program Low willingness to adopt innovative practices <u>Sample teacher statement</u> “I want to change, and I am sure I could make the changes, but I just do not know where to start.”	Innovation Adequate communication of CPD vision followed by deliberate actions designed to increase awareness of innovative, creative, and more student-centered approaches to teaching. Provision of needed resources such as curriculum, equipment, and follow-up support. Identify potential facilitators of innovative practice such as students, teaching colleagues, and administrators.
High satisfaction with current program High self-efficacy to change program Low willingness to adopt innovative practices <u>Sample teacher statement</u> “I like my program the way it is. I could change it if I wanted to, but I am not sure a new way is actually better or just different.”	Education Deliberate actions designed to educate about best practices in teaching physical education (e.g., current philosophy of physical education, self-data collection). Communication of the vision of CPD with a specific focus on how associated changes align with best practice. Provision of needed resources such as curriculum, equipment, and follow-up support, along with examination of current resources and suggestions of possible reallocation of resources to support changes recommended during CPD. Colleagues or mentors who can help to support the change.

Note: The profiles and sample teacher statements described here are representative of teachers who participated in studies conducted by Kern and Graber (2018) and Kern et al. (2019). They are included to illustrate how teachers of varying dispositions toward change respond when change due to CPD is suggested.

Teacher Role Stress Survey (Conley & You, 2009), Physical Education Marginalization and Isolation Survey (Gaudreault, Richards, & Woods, 2017), the Perceived Matterng Questionnaire – Physical Education (Richards, Gaudreault, & Woods, 2017), and the Maslach Burnout Inventory – Educators Survey (Maslach, Jackson, & Schwab, 1996).

Used in combination with the instruments described above, the Teacher Change Questionnaire – Physical Education (Kern & Graber, 2017), can also provide insight into readiness to change, along with information about current and past experiences that serve as barriers to (e.g., feelings of marginalization) and facilitators of (e.g., perceptions of matterng) change. It is proposed that the results from different instruments could be reviewed by CPD providers to recognize the “why” behind teachers’ dispositions, to understand their perceptions of the organizational culture, and to assess their readiness and receptivity to change. A customized approach to longer-term CPD, not a simple one-day inservice event, would be the outcome.

Customizing based on readiness for change

Teachers who demonstrate a high level of current program satisfaction, and whose past socialization experiences align with and help to justify their current curricular practices,

may require more individualized attention to convince them of the benefits of CPD initiatives. For example, they may benefit from hands-on activities to compare current with innovative practice through data collection and self-analysis of their own program. In contrast, teachers with low program satisfaction and dissatisfaction with the status quo will be easier to convince about the benefits of CPD and could potentially take a more active role in mentoring fellow teachers who need a greater degree of support (Glazer & Hannafin, 2006). Even teachers with low program satisfaction might also require additional efforts at empowerment because of the environment in which they work, such as teachers who work with colleagues that are supportive of the status quo (Curtner-Smith, Hastie, & Kinchin, 2008). Additionally, since teachers' perceived satisfaction with their programming is indicative of their beliefs about teaching and learning in physical education, knowledge of their program satisfaction combined with an examination of their current practices and socialization influences could provide a useful starting point from which to begin communicating the vision of CPD.

Customizing based on confidence

Measurement of teachers' self-efficacy or confidence to make pedagogical change can also provide valuable insight that may facilitate change. For example, teachers who are receptive to CPD initiatives may be unwilling to attempt change due to lack of knowledge about or ability to implement the CPD initiative, or they may encounter barriers such as socializing agents (e.g. colleagues, administrators, or students/parents) that discourage change. In these cases, it would be important to examine both the internal and external determinants that influence the adoption of change so that individual implementation skills can be offered, or increased emphasis can be placed on building teacher knowledge (Bandura, 1989). Additionally, some teachers may indicate low confidence to change despite current program dissatisfaction and an effectively communicated vision of CPD. This may be an indication that the teacher does not have an outcome expectation (e.g., belief) that a particular change will be an improvement, or the individual may not feel empowered and supported by others in the workplace to successfully enact change.

Customizing based on innovativeness

Knowledge about teachers' willingness to change (e.g. innovativeness) can enhance the effectiveness of CPD because innovativeness is a trait that is unique to individual teachers, is highly representative of their beliefs about teaching and learning (Ilhan, Çetin, & Arslan, 2014), and is developed in part as a result of their socialization experiences (Richards et al., 2019), as well as their convictions about student learning (Rovegno & Bandhauer, 1997). For example, some teachers may have difficulty accepting new ideas and practices if they were rarely exposed to innovative practices during socialization. These teachers' may have beliefs and subjective theories that are incompatible with the goals of professional development. Even those who were exposed to innovative practice during socialization, however, might find change difficult. Richards and Gordon (2017), for example, found that teachers' who were socialized to view that physical activity was an important goal in physical education were resistant to the teaching personal and social responsibility (TPSR) model (Hellison, 2011) because the focus on social and emotional learning was not compatible with their visions about physical activity engagement. Thus, even those exposed to

innovative curriculum during socialization may find change difficult if it represents a new way of thinking about the curriculum.

Rogers' Diffusions of Innovations Theory (2003) describes individuals who resist changes that move them away from their comfort zone to be those who would either adopt innovative practices much later than others (i.e., late adopters) or not at all (i.e., laggards). Applied to teaching, those in the late adopter or laggard category may tend to resist suggestions of utilizing new teaching strategies or curriculum. Conversely, some teachers quickly adopt new practices (i.e., early adopters) or lead in the advancement of radically new ideas (i.e., innovators; Rogers, 2003). These teachers may have had prior socialization experiences that predispose them to pedagogical change, such as a teacher education program that helped them to understand the importance of reflective practice and continued innovation. Regardless of where teachers may fall along this continuum, understanding teachers' socialization experiences, beliefs, and dispositions will increase the likelihood of successful CPD efforts.

Conclusions and future directions

When examining the concept of teacher change, it is important to consider the socio-political realities of schools (Richards, 2015). Although dispositions toward change are developed as a result of socialization experiences and interactions with socializing agents, the propensity to attempt and initiate change is influenced by teachers' perceived ability to be successful within the context of the workplace, and the dialectic nature of teacher socialization throughout the lifespan (Graber et al., 2017). Some physical education teachers work in schools where they may not share their colleagues' orientations toward teaching, may only interact with students for a limited time each week or may teach in a suboptimal environment. These conditions are known to thwart innovative efforts (Kern et al., 2019; Whipp et al., 2007), and teachers may need to acquire strategies to overcome these barriers. More custodial-oriented teachers may strongly prefer teacher-centered practices (Kern & Graber, 2018) and may require interventions from socializing agents, such as the school principal, to initiate more student-centered learning strategies through CPD (Kern et al., 2019). Involvement from school administration could potentially benefit both innovative and custodial oriented teachers alike and should be an important consideration of how teacher socialization can influence change.

Teacher dispositions toward change provide a window for viewing their beliefs; therefore, future change-related research should examine individuals' beliefs during both the preservice and organizational socialization periods. Understanding dispositions to change upon entrance to PETE might lead teacher educators to challenge students' belief structures and help them recognize the difference between effective and ineffective curriculum and instruction.

The proposal of this integrative model for teacher change comes at a time when a change in today's physical education environment is needed. Most physical education content in US schools is still delivered with a teacher-centered approach and includes primarily team sport or multi-activity content that fails to produce measurable improvements in student physical literacy (Kohl & Cook, 2013; Lee et al., 2007). Additionally, physical education classes across the US continue to lack adequate amounts of moderate to vigorous physical activity despite a wealth of evidence of lifelong health benefits that can be promoted through quality physical

education that includes innovative curriculum and associated teaching strategies (Hills, Dengel, & Lubans, 2015). The apparent acceptance of mediocrity with regard to the quality of physical education instruction that is present in schools is systemic (Kretchmar, 2006) and change must be a collective effort (Lawson, 2018). Teachers currently working in schools have a unique opportunity to be part of dramatic reform; however, top-down forces such as policy and accountability for performance must also be present. This “bottom-up meets top-down” approach is perhaps the most logical and feasible means of producing reform, and the proposed integrative model for teacher change provides a guiding framework for future work in this important area.

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