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METHODOLOGY

Teacher-Led Change in Secondary School Physical Education

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Abstract

How and why meaningful curriculum or program changes happen in physical education is important, but not well understood, especially at the secondary school level. In this longitudinal case study, we examined teacher-initiated changes in a high school physical education program. Data were collected through prolonged engagement over 5 years and included interviews with teachers and students, documents from the physical education department, field notes, survey responses, and presentation notes. A broad range of change forces, including a standards-based assessment program, was assessed using qualitative methods. Consistencies and inconsistencies between Fullan's theoretical framework on changes in education and what occurred in this physical education program are identified. Ways that change was aligned with Fullan's phases of change (Initiation, Implementation, and Institutionalization) were also considered. Results suggest that aspects of Fullan's framework are aligned with systematic changes in physical education. Teachers, as passionate, committed change agents, were essential for positive change. Elements of bottom-up and top-down educational reform were present in varying degrees. The effect of external change agents and funding, however, was noticeably absent.

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As a traditionally marginalized subject area, with little administrative attention, physical education has too often been allowed to languish behind other school reform efforts (Bechtel & O'Sullivan, 2007; Castelli & Rink, 2003; Rink & Mitchell, 2002). Documented positive changes in physical education, especially at the secondary level, have been scarce and often do not describe the long-lasting effects of change. A framework for successful change in schools has been developed by Fullan (2007). This framework has been used to assist and assess changes in many subject areas. Though Fullan's framework has been used to support change efforts within physical education, these studies seldom follow change over time (Rink & Williams, 2003; Wirszyla, 2002). The purpose of this study was to identify changes to a secondary physical education program over 5 years. We also sought to examine ways in which that change in physical education does and does not align with Fullan's theoretical framework for educational reforms.

Fullan's (2007) framework is a synthesis of lessons learned from decades of school-centered reform efforts, making it relevant for studying the complex issue of sustained development for a high school physical education (HSPE) program. Unlike national and state general education reforms that have not been designed to include physical education, and unlike teacher development, which is focused on changes in individual teacher's classroom practice, this study was focused on teacher-led program change at the school level. Our primary intent was to identify elements essential in developing improved HSPE program design, teaching and policies, and student learning and engagement that are sustained over time. Fullan's framework consists of three phases: (1) Initiation, (2) Implementation, and (3) Institutionalization, with a number of factors affecting each phase (Figure 1). Fullan posited that program development efforts acknowledging these phases and addressing related factors can lead to authentic changes in student outcomes and in the organizational capacity of the programs, which are both essential if changes are to be sustained. Studying a highly successful HSPE program through the lens of a framework derived from decades of school reform projects may help increase the practical and theoretical understanding of the improvement phases and processes. Reforms rarely succeed as intended, but understanding the details of the change process in

schools helps to focus efforts for innovation in ways that are sustainable (Fullan, 2007).

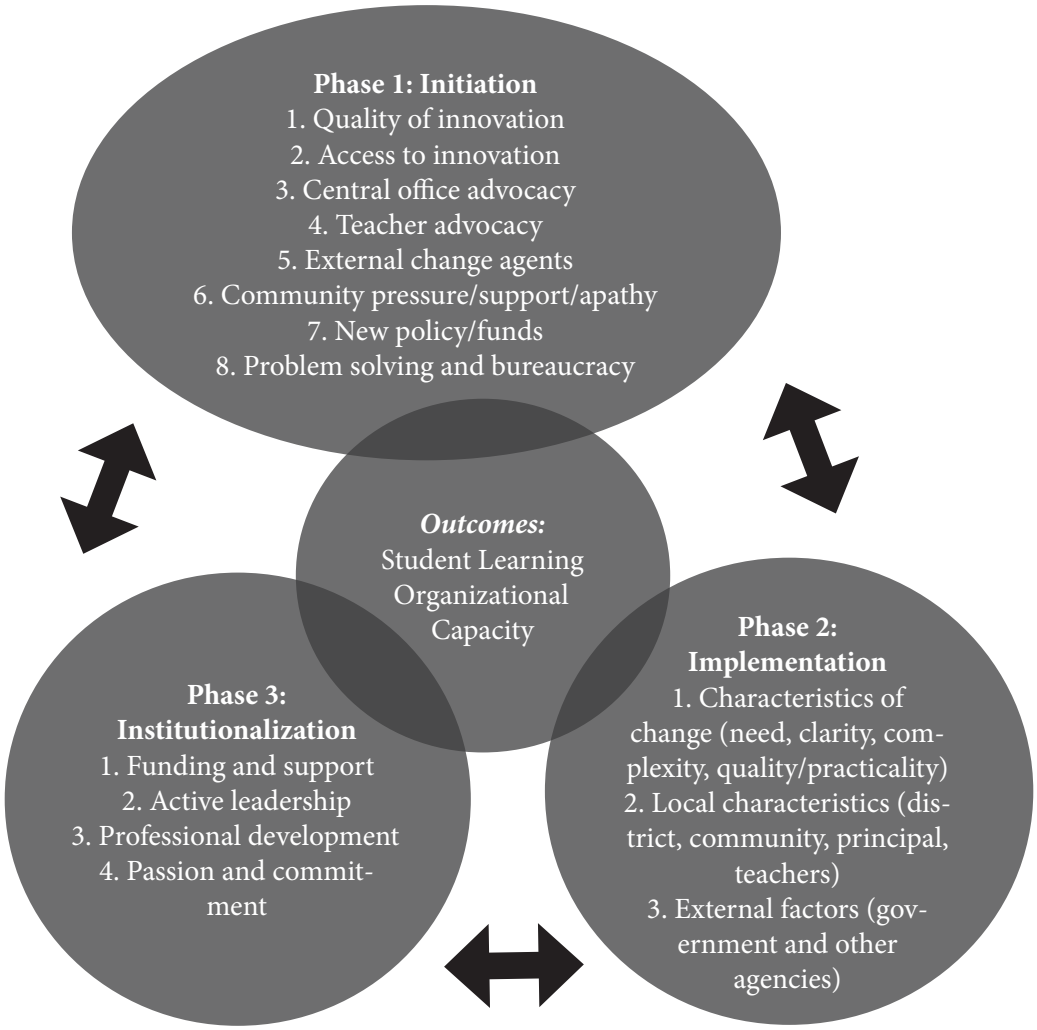

Figure 1. Visual representation of Fullan's framework.

Some reform efforts in physical education, including the National Curriculum implementation efforts in England and Wales as well as state-based efforts in Australia and the United States are examples of top-down innovations that were difficult to implement. Academics

have investigated secondary physical education program change projects to understand the curriculum change process at this level. Kirk and Macdonald (2001) found three dimensions of the local contexts that mediate secondary teachers' authentic implementation of the innovation: teachers' knowledge of their students and community, the human (skills and abilities) and material resources available to teachers, and the practical structures (including class sizes and time) of teachers' work. These factors affect teachers' attempts, or "authoritative voice," to introduce curriculum reforms into their classes (Kirk & Macdonald, 2001, p. 552). Kirk and Macdonald concluded that teachers' authority in program development cannot be overlooked, nor can the quality and presentation of the reform agenda.

Macdonald (2003) and Booker and Macdonald (1999) added another often overlooked factor to program development, student voice, which they described as "marginalized" and a particular problem in physical education. Even when secondary teachers decide to change their programs, working from bottom up may be problematic. As Kirk (1988) described nearly three decades ago, through a closely studied English secondary school PE curriculum reform, three factors—the source of the innovation, teachers' different roles in their collective effort, and "residual ideologies" of what is successful physical education teaching—contribute to conflict and may hinder even teacher-initiated processes of change.

In the last two decades, there have been three prominent lines of research on change in American HSPE programs: (1) the effect of state-mandated changes in accountability for student achievement as a result of standards-based assessment mandate (Castelli & Rink, 2003; Rink & Williams, 2003; Wirszyla, 2002); (2) change implemented through the infusion of substantial federal grant funding for equipment and teacher development (Centeio & Castelli, 2012; Martin, McCaughtry, Kulinna, & Cothran, 2008; McCaughtry, Martin, Kulinna, & Cothran, 2006a, 2006b; Panayiotis & Ward, 1999; Ward, Panayiotis, & Evans, 1999); and (3) the implementation of a health-related physical activity program, such as SPARK (McKenzie, Sallis, & Rosengard, 2009) and other models-based curricular interventions (Casey, 2012). In each of these research initiatives, the sustainability of change has been questioned.

In the standards-based assessment studies, there was evidence that school and teacher accountability for clearly identified and attainable state-mandated physical education outcomes, assessed through student achievement data and included on school report cards, have had a positive effect on HSPE, although without attendant funding, this progress was blunted (Rink & Stewart, 2003). In the various federal grant-funded studies of K–12 school district level change, the purchase of new equipment and staff development on new teaching practices in physical education programs were successful, but these studies often do not reveal what remains of the innovations when the funding ends and the external change agents/researchers have left the schools (McCaughtry et al., 2006b). The high school version of elementary and middle school SPARK projects indicates that modest student increases in moderate to vigorous physical activity and nutrition changes result from well-designed and well-supported staff and program development (Frank, McKenzie, Rosengard, & Smith, 2011). But little has been reported about the degree to which the models are institutionalized in high schools after the initiation or how these curricular models affect students or their teachers in the long term (McKenzie et al., 2009).

In this paper, we present a 5-year longitudinal study in which HSPE teachers were successful in institutionalizing and sustaining program change. Some stimuli for initiating change were the teachers' desire to address criticisms of their high school physical education program, including a poor perception of physical education in the eyes of other school staff, parents, and students; to improve a dysfunctional grading policy; and to address low levels of teacher and student accountability. Teachers in this HSPE program also decided to experiment with a state-supported physical education assessment program to address these concerns. Their assessment initiative evolved beyond a trial in one unit to implementing them in other instructional units, then to persuading other teachers to try using the assessments, and eventually to implementing a formal change in grading policy that included assessment results and the institutionalization of an elective physical education program incorporating student input. Student outcomes included increased student engagement and learning. For teachers, positive outcomes included their perceptions of better teaching and stronger professional

commitment and a sense of increased organizational capacity (i.e., improved problem-solving capacity or ability of the group to engage in continuous improvement; Fullan, 2007).

We analyzed the factors that led to this successful teacher-initiated change in an HSPE program. We studied data collected over a 5-year change process to understand what changes were made; how and why they were initiated, implemented, and institutionalized; and how the process compares with Fullan's (2007) concepts of phases and factors underpinning institutionalized school change (Figure 1). We purposefully assessed the fit of Fullan's framework for change in an HSPE program and identified particular factors to address when planning program development. What factors meaningfully affect initiation, implementation, and institutionalization of change in HSPE programs? Understanding this may be an important step in ameliorating physical education in the current environment of educational reform and may suggest why other HSPE program development efforts fall short.

Method

An interpretive qualitative research approach was taken to assist in identifying influences supporting and impeding sustained program development. This approach was taken to align with the nature of the research questions and with a single case study in a real-world setting. This study was designed to avoid some of the previously identified shortcomings of single case study research, such as insufficient time in the setting and inadequate data collection (Mayring, 2007; Yin, 2009). A longitudinal case study approach was taken to provide researchers with sustained immersion in the school context and sufficient collection of data. Results of longitudinal case studies can be generalized to existing theory but not to specific populations (Yin, 2009). IRB approval and school permissions were obtained before beginning data collection. The methods of this study are presented in three sections: (a) setting and participants, (b) data sources, and (c) data analysis.

Setting and Participants

The school is located in a moderately affluent suburban community in the New York City metropolitan area. The school and teachers selected for this study were known by the researchers and

were chosen because it was inferred that changes were occurring in physical education at this school. As a result, there may be elements of bias associated with the selection and the preexisting and ongoing relationships between the researchers and the teachers. Bias and reflexivity were controlled for as much as possible by using semistructured interviews, field notes, informal observations, and interviews with other personnel in the school.

Teacher participants (n = 5; three female, two male) were HSPE teachers who had taught physical education for 3–16 years at the start of the study. Student participants (n = 12; six female, six male) were selected from class rosters with numbers generated from a random numbers list. Seven students were seniors, two were juniors, and two were freshmen. Informed consent was obtained from students or their parents (for students under 18) and all teachers who participated. Permission was granted for researchers to observe, videotape, and interview during regular physical education classes. Students who participated were selected at random to minimize bias. At this school, ninth through 12th grade students were enrolled in state-mandated physical education courses every semester for 4 years of high school. Classes were 40 min in length with 30 min of activity time per class on alternating school days. Observed physical education content during the study included volleyball, fitness, softball, Ultimate Frisbee, personal wellness, and team handball.

We started the study by investigating how standards-based assessments were implemented in this HSPE program. Initially, two teachers decided to try a statewide assessment package primarily to strengthen the grading policy for required physical education. Data were collected on the teachers' use of assessments and on associated effects on teaching and students. Although assessment scores, video tapes, document collection, and interviews with students and teachers were focused on the effect of assessment at first, we expanded the study to examine broader changes in the physical education program. An ongoing relationship between the researchers and the school district allowed data to be collected to examine the outcomes of this change on the physical education program, the teachers, and the students. Thus, what began with an examination of the implementation of an assessment package evolved into a more comprehensive case study of the process of teacher-initiated curriculum/program and pedagogical changes.

Data Sources

Data were initially collected in 2008, 1 year after the release of the New York State Physical Education Profile (PE Profile; New York State Education Department, 2007), a standards-based high school level assessment tool distributed, but not mandated, by the state education department. The PE Profile consists of authentic rubric-based assessments for a wide range of secondary physical education content, an interactive CD-ROM for teachers to learn and practice how to assess, and guidelines and tips for administering assessments. PE Profile materials and trainings were rolled out statewide through conferences and teacher workshops conducted by turn-key trainers.

Records of de-identified student results on the assessments and digital and hard copy versions of program documents, such as lesson plans, unit plans, and teaching materials, were collected from teachers. Formal semistructured interviews were conducted with two teachers and five students in 2008. Interviews were digitally recorded and transcribed verbatim. Questions for the semistructured interviews were drawn from protocols previously used to investigate school change (Sarason, 2002). All interviews followed the same format to ensure consistency in the data collection. Interview participants were given time to "warm up" in a relaxed atmosphere, facilitated by beginning the interviews with a section of icebreaker questions. Methods of developing rapport, using probes, conversational repairs, and follow-up questions were considered and practiced prior to and during interviews (Patton, 2002; Rubin & Rubin, 1995). These initial interviews were focused on teachers' and students' experiences with assessments and grading policy change. Interviews with students lasted between 20 and 35 min. Interviews with the teachers were 40 min for one and 55 min for the other.

Researchers had access to teachers and students between 2008 and 2012 and interacted three to four times every semester. From 2009 to 2011, one teacher wrote a journal describing teaching and changes within the department and program. Throughout the study, researchers maintained engagement and continued to gather data including class observations, student assessment results, program documents, plan books, and informal interviews. Researchers also assisted with meetings and presentations to various PE professional groups on the implementation and effect of the state assessments

on this program (Cameron & Mercier, 2008; K. Mercier & Iacovelli, 2010).

In 2012, a second series of formal interviews was conducted with students (n = 7; four female, three male) during study halls and with teachers (n = 3; two female, one male) during preparation or supervision periods. A revised semistructured interview guide, built from the original used in 2008, was used to elicit perceptions of change in the physical education program from the students and teachers. Student interviews lasted for 20–40 min and teacher interviews ranged between 45 and 65 min. The interviews conducted were set up to bracket each end of the change processes to allow sufficient time for changes to happen and to allow for distinct data collection points (rather than interviewing throughout). To further document changes in 2012, artifacts, including grading policies, program plans, surveys, and class assignments, were also collected digitally and in hard copy.

Data Analysis

Data were entered into NVivo version 9 (QSR International, 2010) for organization, for coding purposes, to aid in analysis, and to provide a means to evaluate intercoder reliability. These data included transcripts from two rounds of teacher and student interviews (2008 and 2012), grading policies, field notes, teacher journals, professional presentation materials, and teacher documents (e.g., block plans, handouts). Data were analyzed following procedures outlined by Côté, Salmela, and Russell (1995). Two researchers independently analyzed all uploaded data. Initially, data were analyzed for single thoughts or statements and broken into chunks of varying sized phrases, sentences, or whole paragraphs called meaning units (MU; Tesch, 1990). Each researcher coded MU independently, giving tags that reflected content related to the research questions. Similar tags were consolidated into nodes through negotiation between coders. Resulting coded MUs were analyzed for interrater reliability. Both percent agreement and a Kappa coefficient were calculated on all overlapping coding (~80% of all coding). This exceeds Côté et al.'s recommendation of analyzing interrater reliability on 25% of common coding. Nodes were then grouped using NVivo tools. Nodes were initially clustered into eight subgroups that were then reduced to five distinct emergent themes by constant comparison.

Coding from the sets was collected in five documents that all three researchers independently reviewed and cut down to a list of 10 most representative quotes. The top 10 lists were based on selecting MUs that best represented each set according to each researcher. Top 10 lists were then examined for overlaps and commonality. These data analysis methods steps (organizing, abstracting, integrating, and synthesizing) are also in line with recommendations by Goetz and LeCompte (1984).

Trustworthiness was established by following recommendations that the data collected are applicable, consistent, and neutral (Thomas, Nelson, & Silverman, 2005). Data were collected as perceived indicators of change in one physical education program. The longitudinal nature and prolonged engagement of the researchers together with regulated data collection methods argue for consistency. Neutrality was maintained through anonymity of all participants and through researcher impartiality. Further moves toward trustworthiness included providing data to support broadly all emergent themes and triangulation of interviews, observations, and documents when possible. Member checks and peer review are additional steps taken toward trustworthiness. Triangulation was established by using multiple sources of data (multiple participants, collected documents, field notes) and by using more than one researcher to aid in reliability of data analysis (peer review confirming coding, properties, and categories).

Results

The results of this study are representative samples of each set that emerged from data analysis. The five sets describe what changes occurred and teachers' and students' perceptions on how and why changes to the physical education program happened. The sets were (a) aligned with teachers' perspectives (teachers' perspectives on change), (b) students' perspectives (students' view on change in physical education and students' perspectives on their physical education experiences), and (c) to both teachers and students (shared instructional change experiences and program and policy changes).

Intercoder reliabilities between the two researchers who handled the data were calculated across all common MUs. For 139 MUs, the average percent agreement was 86.48% and the Kappa average value was .37. The Kappa value is just below a desirable .40, but it is con-

sidered adequate based on the 80% coding overlap (beyond the 25% overlap recommended by Côté et al., 1995, for establishing reliability) on the interviews. The overlaps for all three researchers related to the top 10 lists were for between two and four quotes common to all three lists and seven and eight for two of the three researchers matching. The data displayed below are drawn largely from overlaps that matched with all three researchers by set. The emergence and refinement of five sets of related MUs was a useful way to consider what changes occurred in this school.

Shared Instructional Change Experience

This set is defined by nodes and MUs that represent ways teachers and/or students experienced changes in instruction. A major catalyst for changing instruction was the PE Profile assessment package. In particular, the teachers frequently referred to their decision to try the assessments as having a noticeable effect on their teaching. The following quote demonstrates not only that the teacher was concerned about student learning but also that assessments were a key to change:

> **Teacher 1:** . . . administrative support, teacher willingness to put in the time to assess and get feedback. To me the number one reason to assess is to give yourself feedback on whether or not you're getting through to the kids and to me that's the number one thing. . . . So that's a feedback I learned from my assessing and now going back to what I said, that's a feedback that helps change; assessing helps change.

Another important consideration for change related to instruction was raised by a teacher who described assessments as important tools to evaluate where students were and to adjust instruction accordingly. It was documented in two field note entries that teachers used the rubrics from the assessment program at the beginning of units to alert students to what was expected. It was indicated in field notes that rubrics were handed out to students and covered at the beginning of a unit and were also enlarged and posted on gym walls. Related to instruction, however, the students' scores on the commonly used authentic assessments, the data from the rubrics, were only used sporadically by teachers throughout the study.

Teachers and students described instructional changes related to assessments:

> **Teacher 2:** We were able to watch the kids in a 4v4 situation and see what types of things they didn't do well. I think my previous experiences and from watching a pre-assessment, showed that there were very few occurrences where students demonstrated any level of strategy. It was really just try to hit the ball back over the net using either a legal or illegal hit. So I think that was really something that guided our instruction and our planning.

The previous quote supports that teachers found the assessments useful in planning instruction, but that this usefulness was based on the process (doing the assessment and looking at specific areas, such as strategy, during game play) rather than on product (the students' scores on the assessments). In several field notes entries, students' use of the assessment rubrics to peer assess during volleyball, softball, and personal wellness classes was documented.

Another teacher credited technology, such as iPads and video use, as affecting instructional change. Teachers were observed videoing students with an iPad and showing footage to students during classes. This represents a departure from practice before the use of assessments for which the content was delivered in the same manner unit after unit and year after year. It is also a form of assessment that occurred outside the PE Profile and may indicate that instructional changes based on a wide form of assessment were welcomed in this physical education program. Changes in teaching required hard work by teachers; however, it was work that yielded perceived benefits—teachers who were willing to put in extra labor for planning and instruction that was instrumental to changing physical education in this case:

> **Teacher 1:** I think it was more of a change for us and I think it was more labor intensive because it wasn't what we always do. It was a nice change, but it was definitely more labor intensive.
>
> **Interviewer:** Can you tell me more about what kind of labor?

> **Teacher 1:** In terms of preparation and planning . . . it was more labor intensive and now that it's done and now we can do this here year after year. . . . So it's more labor intensive and it does require more planning, but if you do it right, there are results.

One teacher's journal matched this sentiment with entries about feeling capable of increasing the number of units in which assessments can be used. The idea of starting small with something you are strong in was also represented in the teacher's journal and in two workshops presented by the teachers at conferences.

Program and Policy Change

Two of the most often mentioned catalysts for change were students' choices of content and grading. Both are important in affecting students' motivation and ownership of their physical education experiences. In many school reforms, the program and policy changes may be imposed in a top-down manner by administrators, but the MUs in this set seem to highlight that these changes were teacher generated.

> **Interviewer:** What caused things to change in physical education here?
>
> **Teacher 1:** . . . We were a little under the gun when people started asking how did we get that grade? We had students who were trying to opt out of physical education and so . . . we saw these things happening and we decided to get ahead of it.

A grading policy handout and grade book entries both supported a change in grading based on an assessment rationale. After gaining administration approval, the grading change was presented to students and parents. The following excerpt is from a physical education grading policy handout:

> Assessment Points (30 per quarter)
> A student can earn up to 30 points in assessments each quarter. The teacher may assess students in a variety of ways,

including but not limited to; skill, strategy, rules application, knowledge (written quizzes) and personal and social responsibility.

Teachers took the initiative and responsibility to adjust not only grading but also physical education content programming based on data collected from their students. Evidence for this was supported by an end-of-year survey given to students in June to ask about content-related changes they would like to see in the next school year. Based on students' responses to the survey, the teachers adjusted the content to be offered in the elective program next year. These teachers saw program change as a shared responsibility that included students' assessment results as well as their views and took it upon themselves to adjust physical education content after analyzing results of students' surveys.

> **Teacher 1:** This is also why we do the surveys at the end (of the school year)—which helps. You have to keep things current and interesting. It motivates. The change is up to the educators and with the help of the kids, because they give us the feedback.

Such seeking out of students' input on program content was far more common than asking for input on policies. No examples of soliciting students' input on physical education policies were found in the data.

Teachers' Perception of Change

This theme set did not have the largest amount of coding, but it did contain MUs that illustrated that these teachers believed they were essential to the change process. In addition, the quotes in this set also indicated that teachers could identify facilitators and impediments to change. Change agents were internal as it was the school's physical education department and their own expectations that fueled programmatic change. Teachers also believed that demonstrating that students are learning and that aligning content assessments and expectations with other high school subjects were important aspects of changing physical education.

> **Teacher 4:** If you focus on it and show the benefits of physical education that is when change will happen. I think it is a group effort and everyone is on the same front and we have assessments and will students complain about it? Of course they will. "Why am I writing in physical education?" You write in math, you write in history; I am not asking you to write every day; however, I need to see if you're learning something. . . . I think change happens when a department as a whole is willing to make these changes and stick to them. [That's when] I think change will happen in your classes.

There was also a perceived need for teachers to break out of the same old teaching habits. Even teachers who were highly experienced and had been working in the school for over a decade were able to change. It is apparently possible to have "veteran" teachers learn new tricks when there is a "perfect storm" of needing to change, wanting to change, having tools to change, and feeling supported to change:

> **Teacher 2:** I think that we spent more time in the planning process which is interesting because we're both established teachers with 10 years of experience. . . . So I think that in the past we relied on our previous experiences and did what we always did. Using the Profile caused us to think a little bit more about the planning and the activities and students who were at different skill levels.

Other indicators of the teachers' perceptions that the changes they were making were for the better were seen in two distinct types of data: in their presentations to state and local physical education groups and administrators and in the form of three physical education teachers in the same school receiving Teacher of the Year awards from professional organizations. It was documented in research field notes that physical educators from this school were invited to speak in physical education teacher education classes, in physical education administrator meetings, and at local and state conferences.

Even with a statewide assessment tool guiding the change, it appears to only work when teachers are genuinely concerned with student learning and have a passion or professional commitment to their work:

> **Interviewer:** Do you feel that it comes from above or do you feel that it is generated . . . how does it [change] happen?
>
> **Teacher 4:** I don't think it's so much from above. I think they expect it, but I think that we feel that as educators we would be doing an injustice if we didn't do it. Also, it gets boring if you just throw a ball out there. You know I am a teacher and became a teacher to teach. So it's not . . . if I wanted to be a rec specialist, I can just go work at a camp. I want the kids to learn and to enjoy themselves.

This idea that physical educators perceive their role in school to be teachers responsible for important content that students will learn and enjoy is at least equally important to change as receiving external accolades for being innovative.

Students' Views of Change in Physical Education

There were more than twice as many students interviewed compared to teachers, but the students' perspectives on change were less revealing in terms of how and why change happened. Although students are obviously affected by changes, they appear to go along with these changes without much questioning or, perhaps, understanding. Their views on change are important, but they may have less to do with how change happens or continues. There were surprisingly no observations of students resisting change (whining about it), and in fact, many cases of students' approval of new content were documented in field notes. Students noticed, enjoyed, and appreciated changes and seemed to demonstrate some understanding of why they were needed:

Interviewer: Do you have any other questions related to teaching volleyball or changing the way that we're teaching stuff in physical education?

Student 0801: No, not really. I'd say that I really like the way the PE system is changing and getting more people involved—I like the way they're doing that.

Interviewer: Why do you think these things are changing or need to occur?

Student 1203: I guess they need to occur because why would you want one specific gym class when there are so many different types of kids that want to do different things and would have more fun playing something different.

The following two quotes, from two high school seniors, demonstrate that they were able to reflect back on previous physical education experiences and see changes made to the program. The first MU indicates a wide range of changes that was picked up by this student including enjoyment, increased participation, targeted instruction, improved teacher awareness, and skill development. Field notes written during class observations indicate extremely high rates of participation with no notes on students sitting out, and many entries refer to high percentages of students showing on-task behaviors. In the following quotes, students identified specific changes in learning:

Student 0801: I'd say the topic of volleyball this year is more fun because I know the gym teachers have been trying to change it up and have more people interact and kind of like have a better game play and to develop our skills better. . . . I think they paid attention more. . . . Compared to other years you'd do this serve and people would slap it around and wouldn't do it, but this year everyone did and they would participate more and they have a better understanding of what we were doing. So I would say the skills were emphasized a lot more in this volleyball unit.

Student 0804: Well something that was different was that we looked at the diamond formation or the umbrella formations, and I didn't know that there were two kinds of formations. I thought it was just the square where the five people with one in the middle. So that was good.

The majority of students saw changes that they could perceive and explain in detail, but not all students were convinced that physical education was changing:

Interviewer: Does physical education seem the same to you or is it changing?

Student 1205: It's the same.

Interviewer: Why do you say that?

Student 1205: Because every year we pretty much do the same thing—soccer, volleyball, football, badminton, and tennis—but tennis is only in High School because they have the courts.

That physical education had evolved into an electives program appears not to have registered with this student. Teachers' documents for electives supported that roughly 80% of students were able to get their first choice of physical education content each semester. Field notes on a wellness class indicated that the class was largely selected by female students, but several male students also liked the change toward a chance to take a class they perceived as enjoyable and less competitive.

Students' Perspectives on Physical Education Experiences

Students interviewed in this study appeared to see physical education as an enjoyable part of their school day. They also appreciated that it was different from other school subjects and liked being able to interact more with their friends and peers. For the most part, students reported that physical education was not a subject on their parents' radar—none had been asked about physical education by parents or ever had a grading issue that required parental intervention. The most salient students' perspectives on their physical educa-

tion experiences that emerged in this set were related to their physical education teachers.

> **Student 1202:** They [physical education teachers] expect a lot from you. They always want you to try. They never want you to just sit around—which is good.
>
> **Student 1205:** They really do help because like Mrs. A definitely helps me actually swing, the proper way to swing, so I can actually hit the ball.
>
> **Interviewer:** When you say *help* describe what she does to help.
>
> **Student 1205:** She, like, tells me the way to move my hips and if I swing too early. So she is very supportive.
>
> **Student 1207:** Yeah, she gives us a rubric to see what the requirements are to get an A.

One important student perspective relates to understanding what is expected to earn a good grade. The familiar use of the word *rubric* by an HSPE student is noteworthy, and samples of grading policy handouts and rubrics posted on gym walls in different units are also evidence that teachers used assessments routinely to give students a clear picture of what was expected of them in physical education.

Discussion

Data from this study indicated that changes within all three Fullan phases were apparent: Program development was initiated, implemented, and institutionalized over 5 years beginning with the actions of two teachers who initially took the lead and continuing with all department teachers using assessments and a changed grading policy. This discussion is focused on highlighting how the results are and are not aligned with Fullan's (2007) factors for successful school change. A summary of these changes and their alignment to Fullan's factors within each phase are presented in Table 1.

Table 1
Data Alignment With Fullan's Phases and Factors

Year	Fullan phase	Factors represented in the data	Factors not represented in the data
2007–2008	Initiation	• Quality of the innovation • Access to the innovation • Teacher advocacy • Problem solving and bureaucracy • Community pressure/support/ apathy • Central office advocacy	• External change agents • New policy/funds
2008–2011	Implementation	• Characteristics of change (need, clarity, complexity, quality/ practicality) • Local characteristics (district, community, principal, teachers)	• External factors (government and other agencies)
2011–2012	Institutionalization	• Active leadership • Professional development • Passion and commitment	• Funding and support

Changes made include the use of standards-based performance assessments to improve student learning, teaching, and changes in program offerings. These changes continued throughout this study, evolving to implement structural changes, such an assessment-based grading policy, and an elective program that was widely popular with students and teachers. Furthermore, teachers readily spoke of additional changes planned for the near future: changed emphases

in fitness/wellness courses and increased use of iPads and other electronic tools in their teaching. Thus, the data show evidence of both major outcomes identified by Fullan (2007) as indicators of successful change: increases in student learning and the increased organizational capacity of teachers and school administrators.

Results indicate that several factors identified by Fullan (2007) were instrumental in these institutionalized program changes. The quality of the innovation, the PE Profile assessment package provided by the state, and the access teachers had to learning about it through the state-provided materials and teacher workshops were important factors in the initiation phase. Although teachers identified the impetus to initiate change was in part due to community and central administrative pressure to make changes in physical education grades and clarify rationales requirements, teacher advocacy also played a part because some of the high school teachers had also identified the need for deeper program and pedagogical changes. Teachers suggested specific program changes and showed confidence in their professional capacity to decide how to proceed. The teachers' voice and ability to be involved in the change process have previously been identified as important considerations in reform efforts (Kirk & Macdonald, 2001). Teacher and student interviews, artifacts, and observations confirmed that students' learning and teachers' pedagogy were affected by the assessments, indicating that the characteristics of the chosen innovation were important in affecting both day-to-day practice and program change over time. This study suggests that the two lead teachers' "authoritative voice" in the selection and implementation of the assessment program contributed to its long-term sustainability. Though the source of the innovation has been shown to hinder teacher-initiated change (Kirk, 1988), it appears to have promoted change in this case.

It has been identified in previous research that student voice is an important, often overlooked factor in program development (Booker & Macdonald, 1999; Macdonald, 2003). In this case, the student survey and interviews of random students confirmed that either students were oblivious to teachers' changes in program or changes had improved students' HSPE experience. Students had varied perceptions of whether there were changes and what the specific changes were. Most of the students' comments were either neutral

or positive. Only a few were able to describe how these changes affected their physical education experiences. In general, students appeared to "go with the flow" without perceiving much in terms of program change. It was surprising to teachers that instead of resisting changes, students appeared to comply with a bare minimum of perceived disruption or unhappiness. Teachers also noticed a decrease in student failures and that fewer students sat out during their classes, further signs that student engagement increased. It could be that the new lessons were of more interest to the students than were the traditional lessons, and their increased engagement led to their acceptance of the increased accountability measures.

It is of note that the passion and commitment of teachers were instrumental in this case of program development. Teachers were able to make changes not only within their own classes, but also across the department, and to gain acceptance of the administration for a fundamental policy change despite the lack of external funding or specific administrative mandate. The need for school-based leaders for program change in physical education is supported in the literature (Castelli & Rink, 2003; R. Mercier, 1999; Wirszyla, 2002), but not often recommended as part of preservice or in-service teacher education in physical education. The lead teachers in this study recognized that their work ethic was an essential component to addressing problems and to ensuring continued support for their subject matter in the school curriculum. It will be interesting to see if this professional passion and commitment are present in other change efforts and how teachers learn to assume responsibility for finding, enacting, or adapting appropriate policy changes, whether they are imposed on programs or internally initiated.

External or additional funding for program development was also not necessary from the point of view of the teachers in this study. This may be explained as a district contextual factor—the school is relatively affluent and amenable to allowing teachers to take the time necessary for in-service workshops and school meetings. In addition, working in well-funded schools removes many of the difficulties and frustrations of teaching in underresourced schools. Teachers here could think about improvements because they were not routinely confronted with more immediate needs.

It is understood that each school is unique, and the results in this case may not transfer to other contexts and other populations. In

other school situations, for example, factors including the initiative for change, the school culture, or the presence of external change agents may be different. What is worthy of reporting, however, is how this study presents a clear picture of how one school initiated, implemented, and institutionalized change in HSPE. At the conclusion of 5 years of data collection, this school had institutionalized change as evidenced by an altered written grading policy, summative assessments for all students by all teachers in sport and physical activity units, an elective program for 10th–12th graders, an increase in teacher and student accountability, and the beginnings of iPads for instruction. Furthermore, evidence of a shared commitment among the physical education teachers to this and future program improvements is apparent.

Broad, systematic change within schools can be hard. Researchers have documented that some of the struggles of implementing and institutionalizing top-down change are difficult, especially in the complex context of American high schools (Rink & Williams, 2003; McKenzie et al., 2009). Becoming more cognizant of change factors may help increase the incidence of sustained change in HSPE programs. It could be that the factors needed for school change are local, as Kirk (1988) revealed, and depend on factors within the process, as Fullan (2007) described. This study indicates that state assessments or a national curriculum could be more efficacious if presented for flexible interpretation by stakeholders. Fullan reported repeatedly that rigid top-down reform efforts are usually unsuccessful or are so modified by teachers that they are unrecognizable to reformers. Though the assessment tools selected by teachers in this study were from a state-level reform innovation, it was not mandated and was offered as an option that the lead teachers in this case sought out.

In this study, it appears that successful implementation of an optional assessment package was largely due to teachers' passion and commitment. Their confidence in initiating these and other changes, such as new teaching practices and elective units, seems to be a chief factor for what became institutionalized change. It could be that the marginalized nature of physical education allowed for teacher autonomy in facilitating change. The importance of the role of physical education teachers is noted, but other components needed for change that align with the Fullan model are present in this study. Studying other successful change programs in HSPE could help identify a

physical education–specific model for change in physical education or confirm the phases and factors presented by Fullan (2007) and how they relate to physical education. In the current realm of educational reform, a model for successful change would tremendously benefit physical education teachers and their students.

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