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PEDAGOGY

What's Going on Out There? An Exploration of K–12 PE Curricular Models and Content Taught in Public Schools

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Abstract

Little is known about which curricular models and activity units are being taught in public schools. This exploratory study examined the K–12 physical education (PE) content and curricular models being implemented. Supervisors of PE recruited from one northeastern state participated in a 25-item questionnaire. Descriptive statistics and frequencies were calculated. Sixty-nine of 92 questionnaires were usable and included in the data analysis. Findings suggest that few districts were using a curricular model at the elementary (K–5) level (27%). Another common response of adopted curricular models at the elementary level was Movement Education (17.6%). At the secondary level, No Model (35%) and Fitness Education (25.6%) were common responses. Specific units such as volleyball, basketball, and weight training yielded the highest responses, while field hockey, golf, archery, lacrosse, and tennis yielded the fewest responses. The findings suggest that K–12 PE curricula may not reflect current trends and mandates. The key determinants could be a lack of curricular model use and heavy reliance upon activities known to present challenges toward standards-based education

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(i.e., softball). Perhaps K–12 PE and PE preparation programs can connect to effectively articulate a curriculum, and adopt and train on curricular approaches aiming to increase teacher effectiveness and reach national standards.

Curriculum has been described as a socially constructed, continuous process where matters such as content knowledge are continually formed, altered, and implemented (Penny, 2006). Historical markers confirm K–12 public school physical education (PE) curricula has endured a seemingly endless shift in content focus. During the late 19th century, PE was established as a meaningful subject area in private and public school curricula. Spikes in immigrant populations from Germany, England, and Sweden propelled this emphasis on human movement.

A significant breakthrough for PE occurred in 1866, when California became the first state to pass legislation requiring twice-a-day PE in public schools. The major focus of instruction at this time was physical health, through German or Swedish gymnastic exercises (Pfister, 2003). By the early 20th century, another shift occurred, bridging John Dewey's suggestion that education focus on the promotion of health and worthy use of leisure time (Darst, Pangrazi, Brusseau, & Erwin, 2015). As a result, PE teachers started to include sport and game content (e.g., baseball, basketball, track and field) in their daily instruction. Further, Williams (1927) championed sportspersonship and teamwork to be infused into the PE curricula, which resulted in the spawn of social development theory.

Sometime in the 1950s, PE curricula shifted back toward physical fitness, when Kraus and Hirschland (1954) found American youth to be much less fit than their European counterparts. Subsequently, the creation of the President's Council of Physical Fitness succeeded. Yet the rapid expansion of sport in latter-20th-century American culture led to sport, once again, serving as a central curriculum focus in PE. Instructional units of basketball, football, baseball (softball), and soccer were commonly incorporated in the program. To assume sport is the only matter of content focus fails to acknowledge the vastness of curricular influence within this subject area. For example, the passage of Title IX in 1972 altered gender-related curriculum decisions and subsequent sport (content) participation (Darst et al., 2015), and the Healthy People 2000 initiative (National

Center for Health Statistics, 2001) found children to be drastically inactive, with an increase in childhood obesity and obesity-related health problems. Once again, public school PE curriculum designers were alerted to health-related physical fitness and activity initiatives due to the subject area's expansive role in public health (Sallis et al., 2012).

Federal and national policy decisions have also guided PE curricula. More recently, federal mandates such as the No Child Left Behind (NCLB) Act of 2001 have spurred initiatives to emphasize "core" subject areas, while indirectly deemphasizing and marginalizing "noncore" subjects (e.g., PE). Reports of reducing PE programs for additional core curricula time were commonplace in the decade following NCLB's passing. This lack of relevance and support at the federal level raises questions about the level of accountability extended to noncore subjects, such as PE. Do states and districts follow through, holding schools accountable for implementing current trends in PE content knowledge and curricula?

Recent efforts by PE's national association, the Society of Health and Physical Educators (SHAPE America), and the inclusion of grade-level benchmarks have led to the development of standards all teachers should use as a foundation and aid toward formal instruction. The overarching goal for benchmarks is to develop physically literate individuals who have the knowledge, skills, and confidence to live a lifetime of activity (SHAPE America, 2013). There is, however, no guarantee that schools and districts adhere to these benchmarks. Moreover, SHAPE America has not offered or recommended a national curricula, leaving many PE administrators on their own to determine the appropriate balance of content knowledge and curricular models to deliver to their students.

Unfortunately, even with these identified national themes and directions for PE, PE teacher education (PETE) programs know little about the content being delivered in public schools. Fostered relationships between the K–12 public school PE program and neighboring PETE program are a logical approach for helping university faculty stay up to date with curricular offerings. This forms a symbiotic relationship between two entities equally reliant upon each other's efforts. Yet achieving this solution can prove difficult. Siedentop and Locke (1997) used terms such as *gridlock* and *systemic*

failure to describe the poor collaboration efforts. They attributed lack of change or improvement to minimal collaborative efforts between public school and PETE programs. Therefore, effective instruction, or success, will be achieved only if practitioners and programs work together. Indeed, literature has confirmed the effectiveness of collaborative efforts (Pennington, Prusak, & Wilkinson, 2014; Prusak, Pennington, Graser, Beighle, & Morgan, 2010). However, only one program appears to have achieved Siedentop and Locke's (1997) level of systematic success (Prusak et al., 2010).

Some researchers (Petray & Hill, 2009) believe the PETE professors are responsible for developing and maintaining relationships with public schools. This may improve PETE preparation of teacher candidates and better align content and curricular models with trends or the interests of student in K–12 schools. However, the unknown in terms of which models and activities are being taught may directly affect the success of PETE programs. For example, teacher candidates may be less marketable when asked specifically about content needing to be taught in a district or about an approach that is misaligned with the district's curriculum. One study examined PETE programs and found only 50% of programs surveyed emphasized one or more curricular models in their coursework (Ayers & Houser, 2008). This can be concerning as researchers have identified an increase in overall teacher effectiveness for those who teach with a curricular model based on research and standards (Metzler, 2005). More commonly used models such as Children Moving (Graham, Holt/Hale, & Parker, 2012), Dynamic Physical Education (Pangrazi & Beighle, 2015), Tactical Games Approach (Mitchell, Oslin, & Griffin, 2013), and Sport Education (Siedentop, Hastie, & van der Mars, 2011) have been emphasized in several PE and PETE programs. Nevertheless, understanding current trends, issues, and which models are successful in surrounding public schools is valuable information for PETE programs and would significantly improve training of teacher candidates.

This study provides a descriptive analysis of the current K–12 public school PE curriculum offerings within one U.S. state. It elicited content knowledge offerings of K–12 PE programs, to provide stakeholders from PETE and K–12 programs with the curricular trends and patterns. Further, its aim was to better understand content trends and curriculum model tendencies of today's PE programs.

Method

Participants

Supervisors of Health/PE from one state in the northeastern United States were recruited. This state employed supervisor positions for each school subject area and defined the position as an educator in possession of a supervisor standard certificate that requires a master's degree (with specific course completion), state instructional certification, and 3 years of teaching experience. This state did not maintain a list of supervisors of Health/PE. All participants (N = 69) self-reported to be supervisors of PE in their school district. Supervisors indicated their gender as male (78.25%) and female (21.75%), along with ethnicity as Caucasian (95.71%), Arab American (1.43%), African American (1.43%), and multiracial (1.43%). Teaching experience ranged from 3 to 21 years, with 12.8 (SD = 6.4) mean years of experience teaching PE against 13.8 (SD = 5.8) mean years of overall teaching experience. Supervisors with current and/or past PE certification (65.2%) outnumbered those without (34.8%). The majority of supervisors achieved a master's degree (76.8%), with 59.4% obtaining a master's related to PE. Table 1 describes characteristics of the participants' school district, including geographic location, socioeconomic status, and populous.

Questionnaires

The 25-item questionnaire employed in this study was designed to access descriptive information on public K–12 PE curricular and content decisions. An institutional review board statement letter requesting agreement to participate, approved by the lead author's university, was provided on the first page. The descriptive nature of the questionnaire was organized by K–12 curricular models being used (two questions) and K–12 PE units being employed (four questions). The questions pertaining to adopted curricular models asked participants to "Please select the current adopted curriculum at your elementary schools" and "Please select the current adopted curriculum at your secondary schools." Respondents could select from (a) Fitness Education, (b) Sport Education (students come up with team names and are given roles, i.e., coach, fitness coach, photographer, etc.), (c) Movement Education/Skill Theme Approach to

Table 1
Participant and District Demographics

Personal information	
Gender	
Male	78%
Female	22%
Ethnicity	
Caucasian	96%
Arab American	1%
African American	1%
Currently Certified PE Teacher	
Yes	65%
No	35%
Years Teaching Experience	
M (*N* = 69)	13.79
SD	5.8
Min	3
Max	20+
Years Teaching PE	
M (*n* = 48)	13.33
SD	5.98
Min	1
Max	20+
Percentage with no experience	21.5%
Hold a Master's Degree	
PE or Related	49%
No Master's	18%
Administration or Related	14%
District information	
Socioeconomic Status of District	
High	33%
Average	42%
Low	25%
Geographic Location	
Urban	16%
Suburban	71%
Rural	13%
Majority of District on Free/Reduced Lunch	
Yes	27.5%
No	72.5%

Physical Education, (d) Teaching Games for Understanding (Tactical Games Approach), (e) I do not know exactly, (f) No curricular models have been adopted, and (g) Leave the selection blank.

The next four questions addressed the types of units taught in the participants' schools: (a) What net/wall-type games are offered in your PE curriculum? (please select all that apply), (b) What target/striking games are offered in your PE curriculum? (please select all that apply), (c) What invasion-type sports are offered in your PE curriculum? (please select all that apply or add at the end), and (d) What health-oriented units are offered in your PE curriculum? (please select all that apply or add at the end). Participants could also list other units in an "Other" option, which was offered at the end of each question. The net/wall games question included eight possible choices, followed by nine possible choices for target/striking games and invasion sports and 10 health-oriented unit choices (see Table 3).

Content validity was established in multiple phases. First, the questionnaire was designed by the lead author, a PETE professor with experience developing similar instruments. The questionnaire was later examined by two reviewers not associated with this study: one PETE professor and one supervisor of PE. Based on reviewer feedback, the questionnaire was modified to better collect the directed information. Because the data were strictly descriptive, additional validity steps were deemed unnecessary.

Procedures

An electronic mailing list consisting of 559 supervisors of Health/PE and athletic directors was used for recruitment of only supervisors of PE. One survey question asked participants to self-report if they were a supervisor of PE within their school district (yes/no response). Participants who indicated no were removed from this study. Purposive or expert sampling techniques were also used because all members of this list (e.g., athletic directors and retired administrators) likely did not possess direct and/or current insight to the purposes of this study. Battaglia (2008) stated that expert sampling is appropriate when sample sizes are small, when representative of restricted geographic areas, and where comparisons to the target population are not a high priority. This study defined the term *expert* as one currently employed by the state's local education agency (LEA) under the position of "supervisor of physical education."

Recruitment of participants occurred in three rounds. The first round of recruitment occurred in February 2016, with e-mail invitations sent to all members (559) on the electronic mailing list. The e-mail contained a description of the project, request for participation, and a link to SurveyMonkey, where the questionnaire could be completed. Of those contacted, 51 individuals who self-reported as a supervisor of PE responded to the initial e-mailed invitation with usable questionnaires. One month later, March 2016, a second round of recruitment occurred with another e-mail inviting participation. The second round yielded 30 participants. The last round of recruitment (April 2016) used expert sampling to recruit participants via phone calls. These calls were extended to 24 known supervisors of PE who had not yet completed the questionnaire. Messages were left and a follow-up phone call ensued a week later if no response. During phone conversation, supervisors were requested to complete the questionnaire sent to their e-mail and the first author further clarified the purpose of the study upon demand. This round resulted in 11 participants.

Invitations to participate in this study yielded 92 applicable questionnaires. According to this study's definition of expert, 23 responses were removed, resulting in an undetermined proportion of participants (supervisors of PE) from one northeastern state ($N = 69$).

Collected data were initially downloaded from SurveyMonkey into Excel and later transferred to SPSS for data analysis. Two outside reviewers verified accuracy of data prior to analysis. Descriptive statistics, percentages, and frequencies were calculated and reported.

Results

Of the completed questionnaires ($N = 69$), a descriptive analysis of public K–12 PE programs was offered. Curricular data were organized based on elementary (Grades K–5) and secondary (Grades 6–12) developmental levels and PE content by commonly occurring sport categories.

Curricular Models

Elementary. The most common response was "No curricular model has been adopted" at 27.5%. Many supervisors left the

question blank (24.6%), while 20.2% noted Movement Education (Graham et al., 2012) and 20.2% reported "I do not know, exactly."

Secondary. The most common response for secondary programs was "No curricular model has been adopted" at 34.8%. The second most common response was "Fitness Education" at 29%, followed by "Teaching Games for Understanding" at 7.2%.

Physical Education Content

Table 2 depicts the number of PE units implemented (by category) in schools as reported by participants (N = 69). The mean number of units taught by category were (a) Net/Wall-related units at 4.22 (SD = 1.72), (b) Target/Striking-related units at 4.01 (SD = 1.22), (c) Invasion-related units at 3.13 (SD = 1.42), and (d) Health-oriented units at 5.58 (SD = 1.76). Table 3 shows the results for the PE content (units) taught across elementary and secondary levels. The highest responses for sport units were Volleyball (100.0%), Basketball (95.6%), Softball (88.4%), and Badminton (87.0%). The highest responses for fitness-based units were Weight Training (88.4%), Walking/Jogging (88.4%), and Yoga (65.2%).

Table 2
Descriptive Statistics of Physical Education Content Taught by Unit Category

Unit	Total possible choices	I do not know	Range	Min	Max	*M*	*SD*
Net/Wall-related units	8	0	8	1	9	4.22	1.72
Target/Striking-related units	9	0	6	1	7	4.01	1.22
Invasion-related units	9	0	5	1	6	3.13	1.42
Health-oriented units	10	1	9	0	9	5.58	1.76

Note. N = 69.

Table 3
Units Taught in Physical Education Organized by Sport Category

	Frequency	
Sport category	***n***	**%**
Net Games		
Badminton	60	87.0
Racquetball	10	14.5
Pickleball	50	72.4
Ping pong	29	42.0
Squash	1	1.4
Speedminton	9	13.0
Tennis	48	70.0
Volleyball	69	100.0
Invasion Games		
Basketball	66	95.7
Field Hockey	14	20.3
Floor Hockey	57	82.6
Football	56	81.2
Lacrosse	27	39.1
Rugby	7	10.1
Soccer	59	85.5
Team Handball	39	56.5
Ultimate Frisbee	59	85.6
Striking and Target Games		
Archery	27	39.1
Baseball	26	37.6
Bocce	5	7.2
Bowling	14	20.3
Cricket	5	7.2
Golf	29	42.0
Kickball	41	59.4
Pool	7	10.1
Softball	61	88.4

Table 3 (cont.)

Sport category	Frequency	
	n	%
Health Club Activities		
Body Pump	3	4.3
Cardio Kickboxing	9	13.0
Cycling	9	13.0
Walking and Jogging	61	88.4
Pilates	15	21.7
Step Aerobics	30	43.5
Weight Training	61	88.4
Yoga	45	65.2
Zumba	21	30.4
Dance	37	53.6
Square dance	8	
Latin	2	
Folk	5	
Social	4	

Note. $N = 69$.

Discussion

This study describes curricular and activity unit practices across one state in the northeastern United States. The results suggest little consistency in curricular offerings with few districts adopting PE curricular models. In fact, 27.5% (elementary) and 34.8% (secondary) of respondents indicated that no curricular model was used. Sport activities are still the most common activity taught, even with a renewed emphasis on physical activity and health-related fitness. For instance, badminton, basketball, floor hockey, football, soccer, softball, and ultimate Frisbee units were implemented at over 80% frequency across reporting schools. Many of the most common activities would not be considered lifetime activities, possibly limiting their use beyond the PE class setting. Even without a clear curricular model, one would hope a greater variety of nontraditional and even greater fitness activities would be offered. Recent research has

indicated that fitness activities and invasion games provide the most physical activity opportunities for youth in PE (Brusseau, Burns, & Fu 2016). As such, the authors recommend that efforts be made by curriculum developers to sandwich traditionally lower physically active units with high physically active units. The authors further suggest a fitness component that enhances the five health-related fitness components be included in the daily lesson.

The lack of consistent curricular models contradicts the efforts of PETE programs. This disconnect is alarming, with many hours and years of training spent providing future teachers with the curricular tools for successful PE programming, only to not be used. This may be associated with a lack of district (or state) policy regarding curriculum expectations or enforcement of policy. Without these directives, many physical educators revert to teaching what and how they were taught when they were K–12 students (Blankenship & Coleman, 2009). The comfort of physical educators with sport may limit their willingness to implement nontraditional activities or models that could aid the obtainment toward one of the profession's primary goals, to help individuals acquire the "knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity" (SHAPE America, 2013, p. 1). Some models are not only centered around sport (i.e., Sport Education or Tactical Games) but also provide a more holistic student experience; however, the findings suggest that most programs promote sport in a more traditional curricular approach. Subsequently, professional development opportunities targeting curricular approaches and/or improvement of communication between supervisors and PETE programs may be warranted.

Similar activity patterns may also be taught across elementary and secondary programs. When curricula is not clearly determined or properly articulated, children could be placed in long extended units, situated in play lessons rather than instruction, and/or participate in similar units every year (K–12). Further, only a few districts (20.2%) reported using an elementary school curriculum model that revolves around locomotor and skill development (i.e., Movement Education/Skill Theme Approach). It has been noted that children would benefit in developing proficiencies in these areas before proceeding to sport engagement, as they are foundational for sport as well as lifetime activity (Graham et al., 2012).

According to the findings, secondary PE may also need to shift its focus to lifetime activities, given the participatory limitations of team-oriented sports, such as football. It was surprising that the participants did not identify the Fitness for Life curricular model. This shift to lifetime activities would need to come from PETE and PE programs, and the task of coordinating how and what to offer to K–12 students is not easy. Districts could clearly identify a scope and sequence across schools (elementary through secondary) to ensure developmentally appropriate lessons and to ensure units build upon prior experiences in a logical and developmentally appropriate sequence. Unfortunately, researchers have found PE staff members have little trust in their district supervisor, describing a lack of experience and expertise in PE pedagogy (Norris et al., 2017). This may hold true in this study, as almost a quarter (21.5%) of supervisors had no years of PE teaching experience. Therefore, some supervisors may not be able to effectively articulate and reform existing curricula on their own. Nevertheless, with persistence and specific educational components established, systemic success is obtainable (Prusak et al., 2010), as long as K–12 PE and PETE programs strive to work collaboratively.

This study does not come without limitations. First, the study used subjective measures to determine qualified participants. Due to the lack of a state-provided list of active supervisors of PE, the authors felt recruitment of participants from the provided electronic mailing list was an appropriate start. Second, generalization of findings may be challenging because districts targeted in this study were from one state consisting of various geographic regions. Last, the use of open-ended questions throughout the survey makes comparisons difficult across all participants since responses varied, albeit slightly. However, this was the first attempt of attaining a detailed breakdown of content being taught in schools, and the questions produced patterns that are worthy of future research. Therefore, future studies may benefit from examining grade-level units to better understand what is being offered in the schools over time. It would also be beneficial for researchers to investigate who ultimately decides curricular and unit decisions (e.g., teachers, supervisors, district collaboration, school administrators). Results suggest that decision making occurred at the local level; however, the data were not discriminate.

Such valuable information ascertained from stakeholders could thus propel the coordination between K–12 PE and PETE programs. Last, the quality of student experiences was beyond the scope of this research, but a study of such would offer a more complete understanding of quality programs and determine if the curricula reflect student interests.

Conclusion

School districts within one northeastern state lack clear curricular direction. Although some novel and fitness activities were highlighted, the majority of unit plans revolved around traditional sport activities. Moreover, some supervisors were unaware of specific models or any model being implemented in their schools, which raises concern to the quality of supervision in schools. Ultimately, this study further highlighted the disconnect between PETE training and what is being taught in K–12 public school PE. PETE professors must take responsibility in acquiring information and assisting PE programs of surrounding school districts. PETE and PE programs will equally benefit. PETE programs would better inform and train their teacher candidates of the most up-to-date content in which K–12 students are interested, and PE programs would adopt researched-based best practices and use curricular approaches optimizing teacher effectiveness and instruction.

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