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Editorial Office

Thomas H. Sawyer, Ed.D., Editor
5840 S. Ernest Street
Terre Haute, IN 47802

Subscription Office

Sagamore Publishing LLC
1807 N. Federal Drive
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COACHING EDUCATION

Positive Youth Development and Citizenship Behaviors in Young Athletes: U.S. and Canadian Coaches' Perspectives

Robert C. Hilliard, Lindsey C. Blom, Mariah A. Sullivan

Abstract

It has been argued that sport is a way for youth to develop psychosocial skills that lead to holistic development. However, participation itself in sport does not lead to this growth; mechanisms for growth must be intentional, often conducted by coaches. Thus, the purpose of this descriptive study was to understand the integration of positive youth development concepts of citizenship into youth sport organizations. One hundred five coaches from the United States and Canada completed an online survey created by the researchers and comprising preexisting measures and newly devised questions. The coaches most heavily emphasized a mastery climate focusing on effort and having fun and emphasized winning the least. Additionally, coaches perceived their youth athletes to learn respect for others, teamwork, and respect for self at the highest rates through participation in their program. Regarding specific techniques for developing citizenship, participants provided many concrete examples in open responses: creating leadership development opportunities for girls in their organization, having

Robert C. Hilliard is an assistant professor, Department of Exercise Science, Shenandoah University. Lindsey C. Blom is a professor of Sport and Exercise Psychology, School of Kinesiology, Ball State University. Mariah A. Sullivan is a doctoral student in Exercise and Nutritional Science, College of Health Solutions, Arizona State University. Please send author correspondence to lcblom@bsu.edu

league homework programs, and running food drives. Research has identified time as a major barrier to the implementation of opportunities for the explicit transfer of citizenship skills, and the participants provided several methods of growth that are not time intensive. The practical implications and limitations of the results are discussed.

It has been argued that in addition to gaining physical benefits through sport, youth should experience psychosocial growth (Côté & Fraser-Thomas, 2007). However, for these benefits to occur, coaches must deliberately integrate opportunities for citizenship and life skill building (e.g., Bean & Forneris, 2016; Kidd, 2011; Petitpas, Cornelius, Van Raalte, & Jones, 2005). Citizenship skills, according to Boon and Gilbert (2010), include behaviors such as "cooperation, ethics, empathy, and conflict resolution" (p. 38) and help people to develop an understanding and appreciation for their responsibility within a community. The Applied Sport-Programming Model (Fraser-Thomas, Côté, & Deakin, 2005) offers a structure for recreational youth sport programs to incorporate positive youth development opportunities, including building citizenship skills, into their sport-specific training. The Applied Sport-Programming Model integrates three components of positive youth development: (a) Benson's (1997) 40 developmental assets, (b) Côté's Developmental Model of Sport Participation (e.g., Côté, 1999), and (c) the National Research Council and Institute of Medicine's (2002) features of settings that foster youth development (for a full description, see Fraser-Thomas et al., 2005). If sport organizations design and implement youth sport programs based on the best practices from these three frameworks, positive outcomes of enhanced competence, confidence, connection, and character will likely occur for youth. Contrarily, if the design or implementation is not structured to enhance positive outcomes, youth sport programs often result in diminished skills and characteristics in youth (Fraser-Thomas et al., 2005). In fact, one study found that sport programs that intentionally incorporated life skill building into its program had higher levels of psychosocial outcomes, compared to sport programs in which this was not intentional (Bean & Forneris, 2016). To be deliberate with the development of positive outcomes and life skills, organizations can implement programs such as Teaching Personal and Social Responsibility (Hellison, 2003), Sports United to Promote Education

and Recreation (Brunelle, Danish, & Forneris, 2007), or Values Through Sport (Blom, Akpan, & Newnam, 2014). Although these programs have been shown to help youth develop assets and life skills, they typically involve significant training, planning, and support for sport organizations to implement and sustain them (Jensen, Hoagwood, & Trickett, 1999; Turnnidge, Côté, & Hancock, 2014); thus, it is crucial to examine options that are less resource-heavy but still lead to positive benefits.

For youth to achieve these benefits, regardless of the program, administrators, coaches, and volunteers must have the ability and commitment necessary to assist youth in developing through sport (Kidd, 2011). Specifically, coaches can have a major influence on the experience of youth athletes (Prichard & Deutsch, 2015). An environment that is task oriented, is focused on skill development, and uses mistakes as learning opportunities is conducive for positive youth development (e.g., MacDonald, Côté, Eys, & Deakin, 2011; Prichard & Deutsch, 2015; Weiss, Stuntz, Bhalla, Bolter, & Price, 2013). Of particular importance here is the creation of a mastery climate in which effort is rewarded and winning de-emphasized (Prichard & Deutsch, 2015). In this climate, athletes are praised predominantly for their effort toward mastering a task and rewarded for challenging themselves, encouraging their teammates, and focusing on improvement rather than perfection (Smith, Smoll, & Cumming, 2007). Other key components include supportive relationships that coaches can develop with their athletes (Fraser-Thomas et al., 2005) and an emphasis on athletes' holistic development. In a sample of U.S. high school coaches, Gould and his colleagues (e.g., Gould, Chung, Smith, & White, 2006; Gould, Collins, Lauer, & Chung, 2007) found evidence to support the importance of developing youth in these areas, with teamwork, work ethic, time management, goal setting, and citizenship rated as most important. However, as Bean and Forneris (2017) also pointed out, one limitation in this area of research is that most studies have examined coaches who deliberately try to incorporate citizenship building into their coaching. Much less is known about other coaches and their beliefs about and integration of citizenship and life skill development. In a qualitative study of 23 "typical" youth sport coaches, Bean and Forneris (2017) identified four major themes related to life skill transfer: (1) It is a natural by-product of sport participation; (2) when intentionally

addressed, it is reactive; (3) intentionality is important; and (4) there are barriers to deliberately teaching life skills. Thus, it appears that at some level many youth sport coaches believe that youth naturally learn the necessary psychosocial skills, but coaches do use teachable moments when appropriate.

However, despite the interest in developing citizenship in their athletes, coaches have struggled to provide tangible examples of how they teach positive life skills to their youth athletes (Lacroix, Camiré, & Trudel, 2008; McCallister, Blinde, & Weiss, 2000). Research using model Canadian coaches found the method they most commonly utilized was to hold general discussions to explicitly teach desired skills (Trottier & Robitaille, 2014). This technique is similar to the reactive approach that many coaches use (Bean & Forneris, 2017). These findings are encouraging, because research indicates that less experienced coaches might not implement explicit strategies (McCallister et al., 2000) and holding a general discussion to take advantage of a teachable moment is a feasible way to foster positive youth development that does not require much extra time or training. Since time has been cited as a barrier to the implementation of explicit transfer strategies (Bean & Forneris, 2017), this method could be particularly valuable for coaches.

This study explored global life skills of citizenship and civic engagement that relate to Benson's (1997) internal assets that center on positive values (i.e., caring, equality and social justice, integrity, honesty, responsibility, and restraint) and social competencies (i.e., planning and decision making, interpersonal competence, cultural competence, resistance skills, and peaceful conflict resolution) in the youth sport environment. Gambone, Yu, Lewis-Charp, Sipe, and Lacoe (2006) stated that youth development programs are ideally suited for the facilitation of civic engagement because they provide the combination of support and opportunities required for overall healthy growth. The United Nations (UN) Sustainable Development Goals (SDGs), formerly Millennium Development Goals (MDGs), are a possible framework for the implementation of citizenship concepts into community sport-based organizations. The MDGs were eight targeted areas of development: poverty and hunger, child mortality and disease, combating HIV/AIDS, promotion of education, maternal health, gender equality, environmental sustainability, and global partnerships, with the ultimate goal to

eradicate worldwide poverty and bring an overall collective global unity (UN Inter-Agency Task Force on Sport for Development and Peace, 2003). In 2016, the UN developed a new set of goals, now 17 SDGs. Few coaches worldwide are aware of the MDGs, or the SDGs (Blom, Van Zee, Hilliard, & Judge, 2014; Boon & Gilbert, 2010), but that is to be expected because the MDGs/SDGs are not focused on Western nations such as the United States or Canada. However, a majority of the targeted areas are still relevant citizenship behaviors that can be developed in Western youth, and thus could provide a basic framework for positive youth development.

Thus, due to the lack of research on typical coaches in youth sport organizations, this mixed-method descriptive study explored the ideology of North American youth sport coaches regarding their beliefs about the psychosocial benefits of sport participation and their facilitation of the growth of citizenship behaviors in their youth. The research was guided by two research questions: (1) What are youth sport coaches' perceptions of the psychosocial benefits that children receive by participating in sport? and (2) Using the MDGs/SDGs as a framework, what strategies are coaches using to develop citizenship?

Method

Participants

A convenience sample of 116 youth sport coaches completed the survey. However, because of severely incomplete questionnaires, only 105 were retained in the final analysis. The final sample consisted of 78 men and 27 women ranging in age from 19 to 67 years (M = 41.45, SD = 11.10). The sample was predominantly Caucasian (87.6%), followed by Latino (4.8%), African American and Asian (1.9% each), and Native American (1.0%), primarily from the United States (89.5%), with the remainder from Canada, and represented a variety of sports, with soccer, baseball, football, and lacrosse as the most prevalent. Participants had between 1 and 36 years of coaching experience in any sport (M = 10.28, SD = 7.88), and out of 99 responses, 72 indicated they were currently coaching in a community or local club. Others were coaching in private clubs, elementary schools, and community centers (churches, YMCA), and some were also coaching high school. Additionally, 72 (68.6%) indicated they had received some type of training in coaching, with responses

ranging from courses offered through the club to having a higher education degree in coaching.

Instruments

We developed a descriptive survey from a combination of preexisting measures and newly developed items to gather demographic information, explore coaching ideology related to the creation of a mastery climate, perceived psychosocial benefits of sport participation in their program, and strategies for facilitating citizenship building. After the initial round of survey development, an expert in the field of using sport for youth development reviewed the survey and provided feedback. In the second stage of development, we edited the survey with the feedback and then piloted it with individuals with experience coaching youth athletes. After the pilot studies were complete, we made minor revisions to create the final survey. The final survey consisted of 64 items and contained nine open-ended questions. This section lists the sections of the questionnaire.

Coaching ideology related to mastery climate. To assess ideology regarding the creation of mastery climate, coaches responded to six items that were created by the researchers, which included questions about coaches' views on mistakes made during practice or training and during competition, as well as what values coaches emphasized throughout the season. For this latter aspect, participants responded about how much they emphasized each objective on a 4-point Likert scale ranging from 1 (*not a focus at all*) to 4 (*my only focus*) for four objectives (i.e., winning, mastering skills, effort, and having fun).

Perceived psychosocial benefits. We measured perceived psychosocial benefits (e.g., teamwork/working together, respect for others, and ability to lead teammates) of participating in sport by using the role of character in sport development subscale from the Positive Youth Development Through Sports Survey (Gould et al., 2006). Using the literature as a guide, we added to the scale an additional four questions that further encapsulated citizenship behaviors that could be learned through sport (e.g., ability to deal with negative and adverse situations; ability to communicate). Table 1 lists these additional items. We did not conduct a psychometric evaluation on the original scale, because the instrument does not seek to measure one theoretical construct, but rather addresses views on multiple

items related to character development. Because no psychometric properties were established for the original scale, we believed this addition of questions to fit our purpose was acceptable. Participants responded to items based on the prompt "Children are deliberately taught [value] through participation in my program" on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*).

Table 1
Scores of Perceived Psychosocial Benefits for Participating in Youth Sport

	Score	
Category	***M***	***SD***
Respect for others	3.75	0.45
Teamwork/working together	3.74	0.44
Respect for self	3.70	0.52
Value of hard work	3.69	0.51
How to compete cleanly and fairly	3.62	0.53
Self-control	3.59	0.51
Motivation to be physically active	3.56	0.55
Winning gracefully	3.53	0.56
Ability to deal with negative and adverse situations[a]	3.52	0.63
Ability to communicate[a]	3.51	0.61
Accept defeat gracefully	3.51	0.54
Not holding grudges after the competition	3.46	0.61
Ability to lead teammates[a]	3.42	0.65
Goal setting	3.41	0.60
Taking accountability for mistakes[a]	3.40	0.63
Fairness	3.31	0.60
Citizenship/abiding by the rules of society	3.31	0.76
Time management	2.90	0.72

[a]Item added to original scale.

Strategies for the facilitation of citizenship building. Using each of the MDGs as a framework, the participants responded to eight open-ended questions that allowed them to share examples of the application of these target goals in their practice. Based on research

(e.g., Blom et al., 2014; Boon & Gilbert, 2010), we expected that the participants would have very little familiarity with the MDGs. Thus, we provided a description of the MDG with each question to help participants think about how they apply that object. Participants were allowed to provide examples of how they directly or indirectly incorporate each of the eight MDGs into their coaching. We slightly altered one of the MDGs to make it more applicable to the organizations. Rather than inferring about reducing child mortality, the survey asked the participants to respond to ways that they promote child health. However, although the survey asked questions about all eight MDGs, we report on only six. Maternal health and combating HIV/AIDS are not foci that are targeted for Western nations, and as expected, no themes emerged for these two MDGs.

Procedure

We obtained approval from the university's institutional ethics board prior to beginning the study. Following approval, we created a database of North American youth sport organizations through an Internet search, personal contacts, and word of mouth. These organizations had to be ones that did not specifically mention the use of sport as a tool for development. From this list, we contacted coaches within the organization for participation in the study. In cases in which the only available e-mail address was a general organization e-mail address, we sent a cover letter that informed the organization of the purpose of the study, provided the link to the survey, and asked the person receiving the e-mail to forward the link to eligible coaches who met the inclusion criteria for the study. If specific coaches' e-mail addresses were available, we directly e-mailed the coach and provided the same information. Potential participants received a follow-up e-mail 3 weeks after the initial e-mail. To be included in the study, individuals must have been in a coaching position within their current youth sport organization for a minimum of 1 year and coached athletes 14 years of age or younger. We set the cutoff at 14 because we wanted to focus on young athletes who were mostly involved in youth leagues that were not associated with high school or secondary school. Overall, we sent 935 e-mails to coaches involved with youth sport organizations. Participants gave informed consent before beginning the online survey that took approximately 15 to 20 min to complete.

Data Analysis

We used a mixed-methods approach to analyze the data. We ran all quantitative analyses in SPSS 21 and calculated descriptive statistics and frequencies to explore coaching philosophy and perceived psychosocial benefits of sport participation. For the qualitative responses, we used a thematic inductive analysis approach to examine the responses for each question (Braun & Clarke, 2006). First, three researchers independently coded the qualitative responses by creating meaningful units of text (Hruschka et al., 2004). Following the initial analysis, the three researchers met to discuss the individual subthemes until a consensus was reached (Mays & Pope, 1995; Silverman & Marvasti, 2008). We took several steps to enhance trustworthiness of the data (Shenton, 2004). The first was a thorough reading and rereading of the responses so that we gained a deep familiarity with the content. Next, three independent researchers ensured investigator triangulation of the data. These researchers coded independently and ultimately reached a consensus with little disagreement. Finally, we used literature and theory (e.g., Benson, 1997; Petitpas et al., 2005) as a guide throughout the process, which Shenton (2004) states is important for the evaluation of qualitative work.

Results

Descriptive Data

We calculated descriptive data and frequencies for the youth sport coaches. Regarding ideology, youth sport coaches indicated that coaches equally put the most emphasis on stressing effort (M = 3.19, SD = 0.50) and having fun (M = 3.19, SD = 0.52) and the least stress on winning (M = 2.17, SD = 0.74). We also evaluated the coaches' views of youth mistakes (Table 2). Although a majority of participants (57.1%) still believed that mistakes during competition were learning tools, the respondents tended to indicate a higher degree of coaching responsibility for mistakes during competition compared to practice.

Table 2
Youth Sport Coaches' View on Mistakes

	Situation			
	During practice		During competition	
View of mistake	*n*	%	*n*	%
A lack of appropriate training	10	9.5	15	14.3
A lack of effort	10	9.5	7	6.7
Unavoidable	10	9.5	13	12.4
Learning tools	71	67.6	60	57.1
A coaching issue	3	2.9	9	8.6

Additionally, Table 1 reports the scores for perceived psychosocial benefits. The top three skills deemed to be learned were respect for others, teamwork, and respect for self. Participants rated time management as the least commonly learned skill. However, there was only a 0.85 difference between the highest and lowest score, suggesting that coaches believed that athletes learned many skills about equally.

Qualitative Data

Participants also provided 144 examples of how they directly or indirectly incorporated the various UN MDGs when coaching. Figure 1 presents a full list of the themes with frequencies.

Poverty and hunger. The MDG of poverty contained 21 responses that resulted in four subthemes: (a) food drives, (b) discuss nutrition/healthy eating, (c) collecting and donating used sports equipment, and (d) community service. Food drives were the most common application of fighting poverty, with coaches stating that they "do a food drive during football season," "[have] food drives on a quarterly basis," and host an annual camp for which the "entry fee is canned food." In the nutrition subtheme, participants said "[they] encourage proper nutrition and hydration for our players," "[they] help develop good nutritional habits," and "players are given nutrition advice." The third subtheme of collecting and donating used sports equipment included responses such as "used sports equipment donations" and "used equipment collection and donation," and one coach "just donated sports equipment for all major sports to an impoverished community." Finally, for community service, one coach

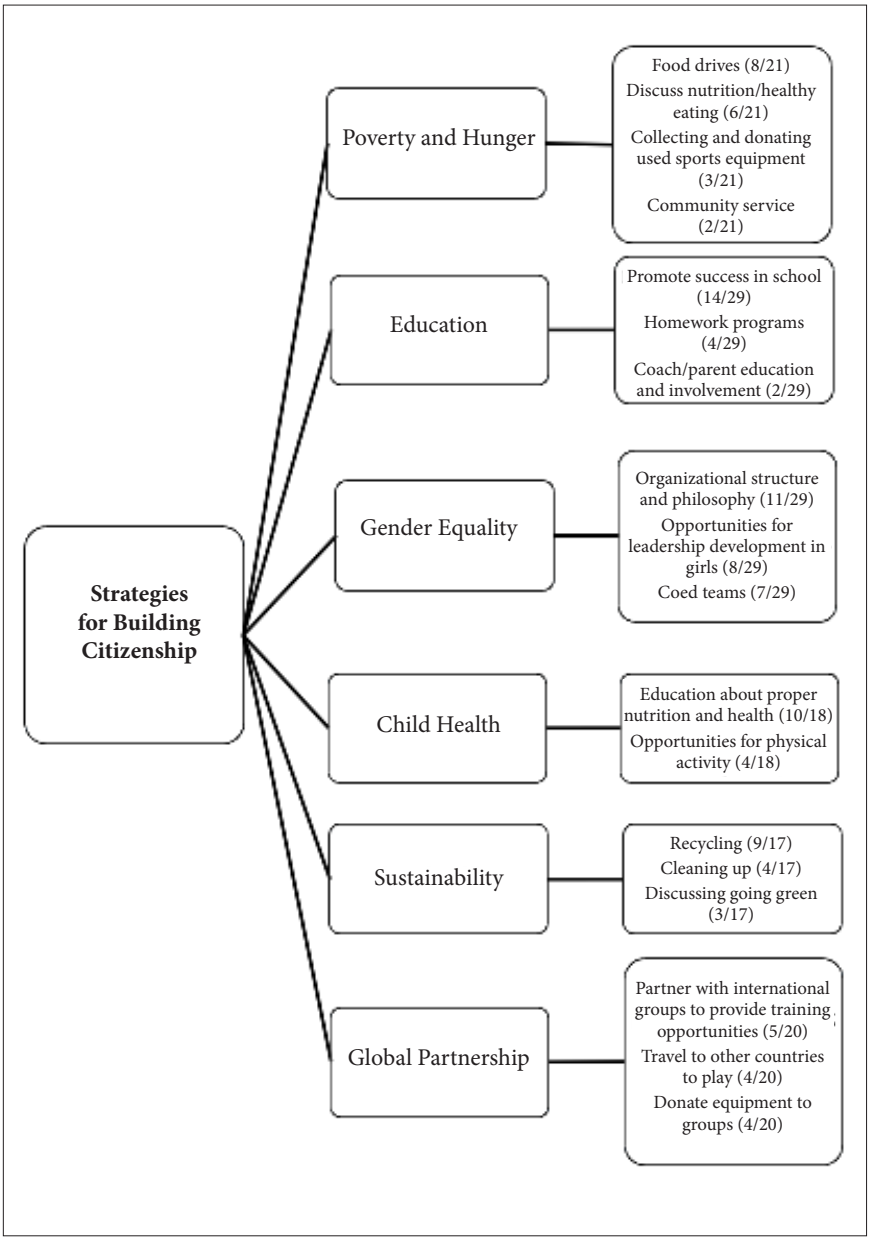

Figure 1. Youth sport coaches' strategies for building citizenship. Numbers next to the theme represent the frequency of that theme divided by the total number of responses for that MDG.

strives "to perform X amount of hours of community service based on age group," whereas another coach "hosts international teaching trips exposing USA students to impoverished areas of the world."

Education. The MDG of education contained 29 responses that resulted in three subthemes: (a) promote success in school, (b) homework programs, and (c) parent/coach education and involvement. Promoting success in school was the most common subtheme, as participants shared they "promote success in school in correlation with success in rugby," they "offer athletes scholar-athlete awards to emphasize the importance of education," and "players who do not keep up with their school work will not be allowed to participate in competitions with the team." Participants also reported ideas related to homework programs. They mentioned they "provide after-school homework programs," "[provide] after-school study time," and have "daily homework help sessions." For the parent/coach education subtheme, comments included that participants are "educating coaches and parents through the Positive Coaching Alliance" and "students on the teams must be doing well in school (based on parents' assessment) in order to participate."

Several participants mentioned offering free sports clinics. However, it is unclear if these clinics were for the public or simply people involved within the coach's organization. Further, the superficial content indicated that clinics were sport focused (e.g., "we hold free/open to the public basketball and flag football clinics" and "town offers clinics to athletes that would like to improve their skills") and therefore were not included as a subtheme promoting education.

Gender equality. The MDG of gender equality contained 29 responses that resulted in three subthemes: (a) organizational structure and philosophy, (b) opportunities for leadership development in girls, and (c) co-ed teams. Organizational structure and philosophy was the most common subtheme, as participants expressed they "encourage and recruit girls to become a part of our organization" and "personally promote leadership opportunities for girls," and one coach stated that his organization has "two female directors out of eight board members. Half of the coaches of our girls teams are women." Opportunities for leadership development was another subtheme, as participants said they "provide opportunities for young women and would encourage them equally as young men

to reach their full potential," host "clinics in women empowerment," and "promote opportunities for girls within our program." Finally, many participants shared that teams were coed, and one participant specifically mentioned, "We allow younger kids to play together in a coed format, in part, to help demonstrate that there is no gender bias and to promote equality among genders."

Child health. The MDG of child health contained 18 responses that resulted in two subthemes: (a) education about proper nutrition and health and (b) opportunities for physical activity. Education about nutrition was the most common subtheme and is similar to the subtheme of discussing nutrition and healthy eating under the poverty MDG. Participants shared they "discuss proper eating habits," "encourage the choice of healthy snacks versus candy," and "train the athletes and parents on proper nutrition." Participants also shared they provide opportunities for physical fitness "via our practices," as well as involvement with "President's Physical Fitness Initiative," and one coach shared that he helps his organization in "putting on a run for obesity race competition."

Sustainability. The MDG of sustainability contained 17 responses that resulted in three subthemes: (a) recycling, (b) cleaning up, and (c) discussing going green. Recycling was the most common application, as participants explained they "have recycling in our building," the "club has had several recycling events for used equipment. Facilities all have recycling bins for plastics and aluminum, which are encouraged for use by all [coaches]," and they "are always promoting recycling and awareness." The cleaning up subtheme included responses related to "[cleaning] up after practices," "keeping our parks clean . . . Parks are typically meant to be ballparks and playgrounds that have diamonds; but the general message applies to all public places," and making "trash runs to pick up debris on the field." For discussing going green, participants said they "discuss gardening and going green," "plan to make one of our events environmentally sustainable," and "work indirectly to decrease their carbon footprint."

Global partnership. The MDG of global partnership contained 20 responses and resulted in three subthemes: (a) partner with international groups to provide training opportunities, (b) travel to other countries to play, and (c) donate equipment to other groups.

Partnering with international groups was the most common subtheme, as participants stated they "work with other organizations and cities to provide training opportunities" and "do organized practices with clubs in other states and countries," and one coach is a member of an organization that is a "proud member of the global rugby initiative." Participants also mentioned traveling to other countries to play. For example, they reported they "collaborate with some clubs in Canada, where some of our teams travel to Canada or they travel to the USA," "have two to three teams travel to compete across the US or outside the country," and "host athletes from PAGU nations to come and train in the United States." The third subtheme of donating equipment to groups consisted of responses such as "we donate gently used supplies," "we provide football boots and gear to children in Liberia," and "we collect used equipment for kids in other countries."

Negative views. Not all participants had positive views about incorporating the UN MDGs in their programs. One participant stated, "I reject anything having to do with the UN" and another participant said, "We're a volunteer organization; not a quasi-political entity." The participant continued,

> The idea of working in all of the things above will destroy any volunteer organization . . . This isn't the purpose of the association. The purpose is to provide a safe healthy atmosphere where the children can learn and apply the skills of the sports they are playing.

Discussion

The apparent interest in promoting a mastery climate and promoting personal growth in the context of citizenship skill building suggested by participants in this study is consistent with that in other research on youth sport coaches (e.g., Boon & Gilbert, 2010; Camiré, Trudel, & Forneris, 2012; Gould et al., 2006; Gould et al., 2007; Lacroix et al., 2008; Strachan, Côté, & Deakin, 2011; Trottier & Robitaille, 2014). The coaches in our study reported putting the most emphasis on effort and having fun, followed by mastering skills, with winning as the least emphasized. This task-oriented, mastery climate is crucial in the development of citizenship, and in one study

examining parents' perceptions of the benefits of their children's (5–8 years) sport participation, parents believed a mastery-focused climate that de-emphasized winning helped their children to receive positive benefits from sport (Neely & Holt, 2014). Of the various psychosocial benefits surveyed, youth sport coaches reported that they believed youth were learning those skills about equally, similar to Gould et al. (2006), and that athletes most commonly learned respect for others, teamwork, and respect for self through participation in sport. Gould et al. (2006) also used this portion of the Youth Development Through Sport Scale and found teamwork, value of hard work, and time management to be the most commonly learned skills in their sample. In our study, participants rated time management the lowest. One reason for this discrepancy may be that Gould et al. (2006) surveyed varsity high school coaches, whereas this sample focused on coaches who coach youth under the age of 14. Time management skills may not be deemed as important a skill to teach to youth of that age as it is to high school athletes, and thus the youth sport coaches may not have been encouraging time management skills. However, the consistency with athletes learning teamwork and respect corroborates the belief that if sport is deliberately crafted into a positive environment, then it can be an avenue to help youth develop some of Benson's (1997) assets.

Furthermore, sport itself will not help an athlete learn teamwork or other positive life skills (e.g., Bean & Forneris, 2016), and research has documented the potential negative effects of sport participation (Fraser-Thomas & Côté, 2009). Instead, coaches must make a conscious effort to teach the desired skill and reinforce it to achieve positive outcomes (e.g., Camiré et al., 2012; Kidd, 2011; Strachan, Côté, & Deakin, 2008, 2011); the MDGs may be a possible framework. One study focused on strategies that coaches can use to teach and reinforce these positive skills to facilitate youth development (Camiré, Forneris, Trudel, & Bernard, 2011). Although the study focused on mostly high school athletes, several recommendations could be applied to working with younger athletes. One of these, which corroborates methods used by coaches in our sample, is organizing throughout the season team activities that allow the athletes to spend time together outside of sport. For example, coaches in this study mentioned using homework programs to emphasize

the importance of education. By attending these sessions, the youth spend additional time with each other in a positive setting. Finally, it is important for coaches to understand not only the necessity of teaching positive life skills in sport but also how to facilitate development in their athletes. Camiré et al. (2011) suggested that to achieve this, coaches not only explain what a life skill is and how it can be transferred outside of sport but also provide athletes with opportunities to practice life skills. In the current study, coaches stated they had their athletes participate in food drives and community service. Participation in community service is a great way for athletes to utilize and transfer some of the positive life skills that they might learn through sport (Camiré et al., 2011; Petitpas et al., 2005), as well as to understand the effect of civic engagement (Gambone et al., 2006).

Despite the promise of the previous suggestions, researchers have described many challenges for future coaches to consider when developing programs and philosophies to facilitate the development of citizenship skills (Bean & Forneris, 2017; Camiré, 2014; Camiré et al., 2011). Most of these challenges were described by high school coaches, and the challenges may be even more difficult for coaches who coach youth under the age of 14. For example, coaches found it difficult to organize activities and opportunities outside of sport (Camiré et al., 2011; Camiré & Trudel, 2014). This may be more challenging with youth who must rely on their parents to get them to these team activities. Similarly, coaches have stated that time limitations affect their ability to explicitly teach citizenship skills (Bean & Forneris, 2017). The coaches in our sample provided several examples of ways to build citizenship that are not time intensive, including having discussions about healthy eating, having food drives or collecting used sports equipment, and promoting success in school. Of the examples listed, they can be easily integrated into stretching periods of practice or the equipment can be collected before practice begins, thus eliminating the need for extra time. Thus, it is important for coach educators and organizational administrators to help coaches identify simple but deliberate ways to incorporate citizenship skill development into the daily sport environment.

There are also several developmental considerations for building citizenship skills in this age group. For example, athletes who are too young may not be able to fully understand how to develop and

transfer these life skills. For coaches who are struggling to facilitate positive youth development, researchers recommend integrating family and school efforts and establishing supportive relationships between coaches and their athletes (Camiré, 2014).

Another interesting finding from this study was that youth sport coaches viewed the role of mistakes differently during practice than during competition. During practice, when athletes were learning the skills, coaches very strongly viewed mistakes as learning tools. Although this belief remained the majority view during competition, the participants indicated higher responses for a lack of appropriate training and a coaching issue, suggesting that when mistakes occurred during the game, coaches accepted responsibility. One way that coaches increase the potential for life skills to be transferred outside of sport is by taking advantage of teachable moments (Camiré et al., 2011; Camiré et al., 2012; Trottier & Robitaille, 2014). Mistakes often provide one type of spontaneous, unplanned opportunity for coaches to have a discussion to teach positive life skills (Trottier & Robitaille, 2014). Additionally, athletes have reported that after making a mistake in practice, they would most like to receive technical feedback and instruction (Sagar & Jowett, 2012). Therefore, coaches should use these moments to provide technical feedback while using them as teachable moments, or a "learning tool," as in our study. Future research should investigate coaches' beliefs about the role of mistakes in the development of youth athletes. To this extent, qualitative research would be useful.

The negative views expressed by some participants are also noteworthy. Although their comments implied they did not believe in implementing principles from the UN, the mission of the organization to which the participant belonged aligns with the tenets of using sport to build citizenship. Therefore, researchers and practitioners should clarify the tenets of positive youth development and the integral role of coaches in promoting these practices.

This study has limitations that must be acknowledged. First, we designed the survey to be completed from the perspective of the coaches, so the results are subject to social desirability. Second, there was a low response rate of approximately 12%. It is possible that not all websites were updated with accurate information and therefore some participants were not reached or were no longer involved with

the organization as a coach. The invited participants who did not respond could have been inherently different from the participants who did respond, which biased our results. Finally, the sample was predominantly male and Caucasian, and future research should attempt to recruit a more diverse population. However, female coaches represented 26% of the sample, which is consistent with research that has found female coaches make up approximately 25–30% of coaches (Forneris, Camiré, & Trudel, 2012; Lacroix et al., 2008). Therefore, this percentage may accurately represent the reality of the gender distribution of coaches in youth sports. Despite these limitations, the study contributes to the literature in several ways. Coaches in the study provided practical ways to implement activities that could help foster growth and development in youth. Second, the results suggest that coaches may view differently mistakes made in competition than in practice. There is scant empirical information on mistakes in the literature, and these results provide a potential starting point for further investigation.

Conclusion

Sports have the potential to promote psychosocial growth; however, coaches should deliberately incorporate techniques from this study and past studies to create an environment in which they can teach these skills and give athletes opportunities to practice these skills. The best way for coaches to create a mastery climate through which development can occur is to focus primarily on effort, deemphasize winning, and use mistakes as learning opportunities. The coaches in this study primarily emphasized having fun, effort, and mastering skills; winning was least emphasized. Through these practices, they are working toward creating a mastery climate that is conducive for psychosocial development.

These data provided many interesting examples of practical ways that programs can integrate the teaching of citizenship and life skills, which coincide with theoretical explanations for positive youth development. For example, participants stated they provided community service opportunities and offered free clinics to the public, and community service projects have been identified as one way to promote growth in youth (Petitpas et al., 2005).

In this sample, many strategies for implementing citizenship and life skills relied on education and verbal persuasion. Therefore, coaches could deliberately relay these types of peace and development ideas in short discussions at the beginning or end of practice. This is a practical application, because time has been identified as one of the main obstacles to implementing citizenship and life skills. Research needs to continue to be conducted on ways to best facilitate the creation of a safe environment that allows for the holistic development of youth athletes.

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PHYSICAL ACTIVITY

At-Risk Youth in an After-School Program: Structured vs. Unstructured Physical Activity

Christopher John Kinder, Karen Lux Gaudreault, Jayne M. Jenkins, Christine E. Wade, Amelia Mays Woods

Abstract

Youth physical activity (PA) levels are a central focus for physical educators and health professionals worldwide. This study (a) examined the PA levels of children during structured and unstructured PA lessons of an after-school program (ASP) and (b) described the children's perceptions of structured and unstructured PA. Participants were 31 children, M_{age} (10.37 ± 1.4 yrs.), BMI percentile (79.86 ± 28.01), who actively participated in an ASP. Activity measurements examined mean steps per minute, percentage of MVPA, and percentage of activity time during unstructured and structured PA opportunities. Children accumulated higher mean steps per minute and percentage of activity time during unstructured PA; however, they had a higher mean percentage of MVPA during structured PA. There were statistically significant differences between mean steps per minute and mean percentage activity time. The findings suggest that implementation of

Christopher John Kinder is a doctoral student, Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign. Karen Lux Gaudreault is an assistant professor, Department of Health, Exercise, and Sports Sciences, University of New Mexico. Jayne M. Jenkins is a professor, Division of Kinesiology and Health, University of Wyoming. Christine E. Wade is an associate professor, Department of Family and Consumer Sciences, University of Wyoming. Amelia Mays Woods is a professor, Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign. Please send author correspondence to ckinder3@illinois.edu

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forms of unstructured PA may increase the daily PA of youth and help them to meet recent national recommendations.

An estimated 32% of U.S. youth are considered overweight or obese, and the prevalence of extreme obesity varies by ethnic and age groups (Durstine, Gordon, Wang, & Luo, 2013; Koebnick et al., 2010; Tudor-Locke, Lee, Morgan, Beighle, & Pangrazi, 2006). Scholars have argued that early intervention programs supporting children and adolescents may be an excellent method of preventing adult obesity early on (Beets, Beighle, Erwin, & Huberty, 2009), as children and adolescents considered overweight or obese are more likely to become obese as adults. The persistence of obesity from early life into adulthood can present individuals with consequences related to metabolic syndrome (MetS). The presence of this metabolic condition is associated with increased risk of disease (including cardiovacular disease, diabetes, and some cancers) and all-cause mortality (Katzmarzyk, Church, Janssen, Ross, & Blair, 2005).

Individual, family, environmental factors, and affluence can contribute to the increase in the percentage of youth who are overweight and obese (Cadogan, Keane, & Kearney, 2014). Studies have focused on evaluated treatments for childhood and adolescent obesity, with methods that focus solely on behavior modification (Sallis, Prochaska, & Taylor, 2000). Population-based approaches targeting youth who are at risk that focus on obesity have shown positive short-term effects over a longitudinal period (Bray, Bouchard, & James, 1998).

Numerous studies have examined youth physical activity (PA; Beighle, Morgan, Masurier, & Pangrazi, 2006; Trost, Rosenkranz, & Dzewaltowski, 2008; Tudor-Locke et al., 2006). These studies have described difficulties in providing evidence for clear, health-enhancing effects of PA for children and adolescents. It is believed that participation and enjoyment in physical activities may prevent health problems from overweight or obesity across the life span (Lee et al., 2012). Findings suggest that a majority of youth fail to meet daily PA recommendations in the United States.

It is recommended that children and adolescents participate in at least 60 min of moderate-intensity PA most days of the week, preferably daily. The U.S. Department of Health and Human Services' (2016) Physical Activity Guidelines for Americans set a national

agenda to increase the proportion of children and adolescents who engage in daily moderate-to-vigorous PA (U.S. Department of Health and Human Services, 2016). According to the Office of Disease Prevention and Health Promotion, "only 20.6% of adolescents met the current physical activity guidelines for aerobic and muscle-strengthening physical activity in 2012" (p. 8). It is imperative for children's and adolescents' health and well-being that these recommendations and goals be achieved.

PA may be divided into two types: structured and unstructured. Structured PA is any activity that is organized, planned, and developed with the assistance of an instructor, with intentional directions, objectives, goals, or focus. Gutierrez, Williams, Coleman, Garrahy, and Laurson (2016) investigated the effect of physical education and structured recess on sixth-grade students' percentage of daily PA level across gender, BMI, and PA outside of recess. Results indicated that boys were more active than girls and students in the lower percentile for BMI were more active than students in higher BMI percentiles. Findings indicate that PE and recess attribute to roughly 30% of students' daily PA, when based on daily steps (Tudor-Locke et al., 2006). Boys tend to accumulate more activity time and steps during recess and outside of school (Beighle et al., 2006). Further, after-school programs (ASPs) have emerged as a viable source for children to achieve daily PA (Beighle et al., 2006; Riddoch, 2004; Trost et al., 2008).

Unstructured PA is considered free time, self-selected free play, nonguided activity, or nonformal activity. Unstructured PA may also be defined as PA that allows individuals to engage in creative, explorative, and social play (SPARK PE, 2015). Literature investigating unstructured PA is less prevalent. These studies typically report unstructured discretionary time includes recess, lunch-break recess, and any out-of-school activity. Fewer studies have examined PA levels of children during recess (Beighle et al., 2006; Gutierrez et al., 2016; Tudor-Locke et al., 2006; Woods, Graber, Daum, & Gentry, 2015). Studies have found that children can accumulate meaningful PA during recess and that "children spend the majority (> 60%) of their recess time in physical activity and a smaller proportion of outside of school time in activity (≈ 20%)" (Beighle et al., 2006, p. 518).

Together, these results suggest that unstructured PA opportunities can account for a significant proportion of youth PA.

Trost et al. (2008) examined PA levels among children who attended ASPs, in an attempt to understand the activity preferences of children who are overweight and obese and attend these settings. They identified significant differences in moderate-to-vigorous PA (MVPA) levels between free play and structured PA sessions. Children in organized PA sessions had approximately 24–55% lower MVPA than children in free-play sessions (Trost et al., 2008). This finding indicates that unstructured PA performed in a natural context, such as self-selected free play and games, has the potential to enhance the PA engagement of youth.

Frymier and Gansneder (1989) defined *at risk* as a process or function that lies on a continuum associated with an individual's life experiences, while Moore (2006) delineated *at risk* as "a concept reflecting chance or probability of increasing risk factors that raise the chance for negative outcomes" (p. 3). Influencing factors affecting this population include low socioeconomic status, increased sedentary behaviors, low parental involvement, substance abuse, and other environmental contexts (Curtis, Hinckson, & Tineke, 2012; Thompson & Kelly-Vance, 2001; Vizcaíno et al., 2008). As youth are persistently exposed to a variety of circumstances that classify them as at risk, research suggests that ASPs may be one solution to a community and nationwide challenge. Thompson and Kelly-Vance (2001) suggested that "youth mentoring programs implemented in a systematic, structured method have the opportunity to assist youth in overcoming the obstacles placing them at-risk" (p. 229).

Currently, 6.5 million children attend ASPs, while 20–25% of low- to moderate-income children aged 6 to 14 years spend time in ASPs (Halpern, 1999; Trost et al., 2008). Recently, studies have focused on the role of ASPs in the promotion of and engagement in PA during this discretionary time (Beets et al., 2009; Gaudreault, Shiver, Kinder, & Guseman, 2016). Access to ASPs may be an opportunity for youth to attain a majority of PA outside of school, and the provision of ASPs that motivate children to engage in PA and other healthy behaviors can be viewed as one potential solution that enhances the lives of youth who are at risk.

Self-determination theory (SDT; Deci & Ryan, 1985) provided the theoretical framework for this study. SDT proposes that the fundamental psychological needs of competence, autonomy, and relatedness produce human motivation (Deci & Ryan, 2000, 2004; Ryan & Deci, 2000). *Competence* is an individual's inherent desire to feel effective in interacting with the environment (Deci & Ryan, 2000; White, 1959). *Autonomy* is the feeling of control in a person's actions or freedom from external control and influence. *Relatedness* is a feeling of connectedness or belonging to a group, and individuals sense positive emotions while acting within a group (Deci & Ryan, 2000).

Participation in PA is determined through a person's perception of pleasure and fulfillment with engaging in the activity. For the behavior to be self-determined, an individual must have the ability to act efficaciously and positively with the environment, have interdependence, and feel connected with others. Children's perceptions of unstructured and structured PA opportunities may be influenced by their motivation and behaviors through the basic needs of competence, autonomy, and relatedness, as these tenets can significantly influence the motivational direction in which individuals navigate.

SDT has provided a theoretical framework for understanding motives that strongly influence children's and adolescents' attitudes toward PA (Nurmi, Hagger, Haukkala, Araujo-Soares, & Hankonen, 2016). Few studies have examined the associations between autonomy, competence, relatedness, and PA behavior patterns among youth who are at risk (McDavid, McDonough, Blankenship, & Lebreton, 2017; Ntoumanis, 2005; Nurmi et al., 2016; Vierling, Standage, & Treasure, 2007). Some studies of self-determined motivation in PA among youth have focused on specific contexts such as PE, sport, and differences between sexes. Other studies have supported fostering the basic psychological needs satisfaction of PA among youth. Other findings have indicated that having a choice in activity increases engagement and positive perceptions in PE for females (Mitchell, Gray, & Inchley, 2015). Therefore, the degree to which females feel autonomous and have a relatedness-supportive environment may be a strong predictor of their PA engagement. Males seem to require autonomy, competence, and relatedness in SDT, which is strongly associated with satisfaction and engagement in positive PA behaviors.

Children's perceptions of unstructured and structured PA opportunities may be influenced by their motivation and behaviors through the three basic psychological needs of SDT. This study attempts to fill a void in the literature surrounding best practices for addressing programming for ASPs working with youth who are overweight, obese, and/or at risk. More specifically, the basic psychological needs of competence, autonomy, and relatedness assist with understanding the behavior and motivation supporting children's perceptions. This study aims to provide an explanation to unanswered questions regarding unstructured and structured PA in youth who are at risk.

While much is known about ASPs, PA levels of youth who are at risk, and PA levels of children with overweight/obesity challenges, little is known about the activity levels of children who are at risk and attend ASPs. Examining the amount of PA that children achieve outside of school is important for determining where and when children receive PA opportunities. Further, research needs to examine the differences in children's PA during structured versus unstructured discretionary times. Therefore, this study (a) examined children's PA levels within a multidisciplinary ASP during structured and unstructured PA lessons and (b) described children's perceptions about structured and unstructured PA contexts. Research questions guiding this study included

1. How active are the children during unstructured and structured PA opportunities?
2. How do the children describe unstructured and structured PA experiences with the program?

Method

A mixed-methods design was employed to answer the research questions. Quantitative data sources included mean step counts, mean percentage of time spent in MVPA, and mean percentage of time spent in activity time, all captured during the ASP weekly sessions. Qualitative data included individual interviews with each child (N = 31), which provided an in-depth understanding of the children's perceptions of unstructured and structured PA experiences.

Participants and Recruitment

Participants were 31 children, M_{age} (10.37 ± 1.4 years), BMI (24.29 ± 8.74), and BMI percentile (79.86 ± 28.01), who participated

in the ASP. Participants were removed from the data set if they were unable to attend at least 8 of the 12 sessions. Table 1 provides baseline demographics and anthropometric characteristics for the ASP participants.

Table 1
Descriptive Characteristics of ASP Participants (N = 31)

Characteristic	*N* (%)	*M* ± SD
Age (years)		
6–14 years		10.37 ± 1.4
Sex		
Male	18 (58.1)	
Female	13 (41.9)	
Ethnicity		
Caucasian/White	16 (51.61)	
Caucasian/Hispanic	9 (29.03)	
Hispanic	2 (6.45)	
Multiracial	3 (9.68)	
African American	1 (3.22)	
Anthropometric Measures		
Height (cm)		140.83 ± 11.97
Weight (kg)		48.24 ± 20.55
Waist Circumference (cm)		78.10 ± 18.21
Body Mass Index (BMI)		24.29 ± 8.74
BMI Percentile		
Normal (5th to 85th percentile)	11	48.6 ± 25.97
Overweight (85th to 95th percentile)	2	90.8 ± 3.3
Obese (≥ 95th percentile)	18	97.7 ± 2.18
Mean BMI percentile across all participants		79.86 ± 28.01

The ASP occurred on the campus of a mid-size public institution in the Mountain West and a nearby community college. The two towns were Mountain West communities with populations near 32,000 and 63,000. Participants in this study were selected from six elementary and middle schools located in the respective cities.

Following university institutional review board approval, children meeting the selection criteria were identified by local pediatricians, wellness centers (family counselor), and school personnel

(school nurse, principal, social worker, and/or counselors) and were referred to the research team. An open invitation to participate was extended via e-mail or in person. Parents provided informed consent prior to their child participating in the program and/or study. The children provided verbal assent prior to activity.

Program Intervention

Participants engaged in a 24-week intervention; however, data collection only occurred during the first twelve weeks of programming. The program met after school, once per week, for approximately 2 hr. All sessions incorporated four curricular components. Table 2 provides a sample weekly lesson plan of a typical session for the ASP.

Table 2
Sample Lesson Plan Format of Weekly Session

Time	Component	Description
3:35 PM–3:45 PM	Pedometer Calibration	Arrival of participants and mentors. Pedometer calibration and recorded logs begin.
3:45 PM–4:00 PM	Unstructured Free Time	Participants engage in unstructured PA with mentors.
4:00 PM–4:05 PM	Pedometer Data Collection	Participants' pedometer data recorded on handwritten log.
4:05 PM–4:25 PM	Physical Activity Component	Participants engage in structured PA with mentors.
4:25 PM–4:30 PM	Pedometer Data Collection	Participants' pedometer data recorded on handwritten log.
4:30 PM–4:50 PM	Nutrition Component	Participants learn a topic surrounding nutrition and engage in structured PA related to this topic.
4:50 PM–4:55 PM	Data Collection	Participants' pedometer data recorded on handwritten log.

Table 2 (cont.)

Time	Component	Description
4:55 PM–5:10 PM	Behavioral Health Component	Participants engage in partner and group discussions/activities encompassing behavioral health.
5:10 PM–5:15 PM	Pedometer Data Collection	Participants' pedometer data recorded on handwritten log.
5:15 PM–5:27 PM	Unstructured Free Time	Participants engage in unstructured PA with mentor.
5:27 PM–5:30 PM	Pedometer Data Collection	Pedometer data for each participant uploaded into FitStep Pro 2.0 software prior to club departure.

Each weekly session began with approximately 20 min of unstructured PA. During this time, the children were free to choose activities, equipment, and games of their own design. During this time, they typically engaged with undergraduate student mentors who participated in the ASP for service-learning experience. Following this, the children engaged in PA during a structured, instructor-led lesson for 20 min. These lessons were adapted from the SPARK curriculum, *Focus on Fitness* and *Spotlight on Skills*, which included detailed lesson plans that teach fitness concepts (SPARK, 2015). As a result, the structured PA lessons were designed with lesson objectives centering on active, high-intensity movement opportunities through games, sport, dance, and fitness skill.

Structured PA was embedded throughout the remaining two sessions. Nutrition and behavioral health lessons were roughly 20 min each. All sessions were designed to maximize MVPA while teaching concepts in these curricular areas. Finally, the last 20 min of each session was devoted to unstructured PA wherein the children were encouraged to remain active yet engage in an activity of their choice.

Procedures

Instrumentation. Data on children's PA levels were measured via Gopher FitStep Pro pedometers. Recently, pedometers have gained additional support as an increasingly practical and acceptable tool for estimating PA levels of children in field settings (Tudor-Locke, WIliams, Reis, & Plato, 2002). Numerous studies have described pedometers as feasible, user-friendly devices that can provide researchers with valid and reliable information related to steps per minute, time spent active, and time spent engaged in MVPA (Beets, Bornstein, Beighle, Cardinal, & Morgan, 2010; Brusseau et al., 2011; Flohr, Todd, & Tudor-Locke, 2006; Tudor-Locke et al., 2006).

Participants were assigned a pedometer, and calibration followed the guidelines established by Gopher Sport (2016) for the FitStep Pro pedometer. Calibration was completed prior to each program and data collection session for accuracy. The lead researcher trained an undergraduate intern in the calibration protocol. This intern calibrated of all pedometers throughout the data collection process. At the beginning of each session, the intern performed calibration on each pedometer, without exception. At the end of each session component, the intern recorded each child's total step count, MVPA, and activity time accumulated on a pedometer log. The intern was also recorded the time that children began a component of the program (Table 2). Following the final 20-min period of unstructured PA, the children lined up in order of their pedometer number to upload their data into the Gopher FitStep Pro 2.0 software. Each child's data were then saved onto a laptop exclusively used for this purpose. The electronic data were uploaded to a saved warehouse folder in a password-protected drive, and only the investigators involved in the ASP had access to these data.

The children wore pedometers throughout each session and were consistently instructed to keep their pedometers on at all times and following calibration. Program coordinators, research interns, and undergraduate student mentors closely observed the children to ensure that tampering of devices did not occur.

Data Collection

Pedometers. Pedometer data were collected for 10 of the first 12 weeks of the program, following the protocol described. Data were

not collected during Weeks 1 and 12 due to administrative time constraints (e.g., paperwork, anthropometric measurements). Data sources included mean steps per minute, mean MVPA, and mean activity time during structured versus unstructured PA.

Individual interviews. Individual semistructured interviews (following an interview guide; Table 3) captured children's perceptions of the two PA opportunities. Interview questions were designed to gather the children's perceptions, feelings, and enjoyment of the two PA contexts. In the interview, the children were shown four cards, each with a picture or diagram representing the four program components (free time, PA game, nutrition game, and behavior activity). The children were then asked to select a favorite component and describe their reasons for selecting it. Interviews served to support pedometer data, were audio recorded, and were transcribed verbatim for analysis.

Table 3
Sample Semistructured Interview Guide

1.	What is your favorite thing about the program?
2.	Tell me about what kinds of things you do while you are here?
Show them task cards:	
3.	Out of these four cards, which choice of activity do you like doing the most here?
4.	Can you give me some reasons why you like this activity so much?
5.	Describe some of the things you may do during this time?
6.	Which activity do you think you stay most active during?
7.	How about the other choices you see on the task cards?
8.	Is there anything else about these choice that you would like to tell me?

Data Analysis

Quantitative data. Data were analyzed via within-subjects repeated-measures analysis of variances (ANOVAs) for differences in children's mean steps per minute, mean percentage of time in MVPA, and mean percentage of activity time between structured and unstructured PA. Data were examined for extreme outliers and none were identified.

Qualitative data. Interview data were analyzed inductively in collaboration with an experienced scholar with expertise in qualitative design following protocol outlined by Merriam and Tisdell (2016). The analysis process involved open coding, code categorization, theme development, and the search for negative cases. Following this, themes were considered collectively with quantitative data so the researchers could fulfill the purpose of the study and answer the research questions. Finally, for the researchers to fully explain and make meaning of the children's perceptions, data were considered relative to the literature surrounding PA and SDT.

Results

Mean Steps Per Minute, Mean MVPA, and Mean Activity Time

Within-subjects repeated-measures ANOVAs examined whether mean steps per minute, mean percentage in MVPA, and mean percentage of activity time in structured versus unstructured PA were statistically significantly different. The null hypothesis was assumed (i.e., there was no statistically significant difference in the dependent variables based on the independent variable of structured versus unstructured PA). For protection against Type I error, a Bonferroni correction corrected the alpha level (i.e., taking the traditional alpha level of .05 and dividing by the number of dependent variables, in this case 3), providing an adjusted alpha level of 0.017.

Repeated-measures ANOVA univariate tests of within-subjects effects showed a statistically significant difference based on activity type with regard to children's mean steps per minute, $F(1, 30) = 191.91$, $p < .001$, $\eta^2 = .87$, and mean percentage of activity time, $F(1, 30) = 165.29$, $p < .001$, $\eta^2 = .85$. Differences in children's mean percentage of time in MVPA approached statistical significance, $F(1, 30) = 6.27$, $p = .018$, $\eta^2 = .17$.

Figure 1 shows the mean steps per minute across the two independent variables. Figures 2 and 3 illustrate percentage of time spent engaged in MVPA and percentage of time spent engaged in activity time, respectively, across the total time available in structured and unstructured PA opportunities.

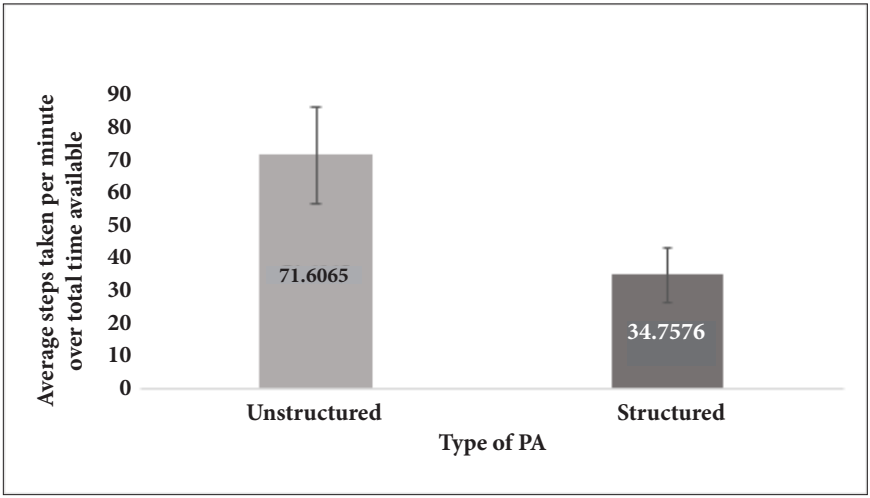

Figure 1. Difference in mean steps per minute taken during unstructured and structured physical activity, which was statistically significant. Standard error is represented in the figure by the error bar on each column.

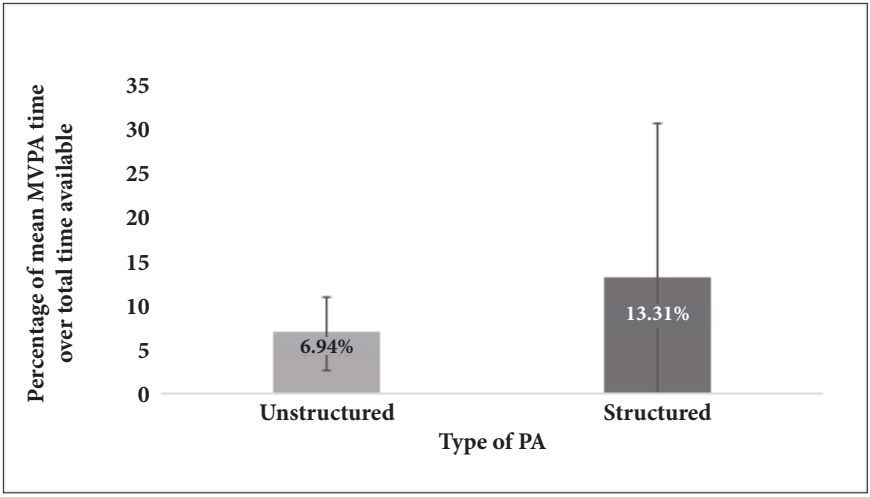

Figure 2. Difference in mean percentage of time spent engaged in MVPA during the total time available during unstructured and structured physical activity. There was no statistically significant difference between percentages of time spent in MVPA in unstructured versus structured activities. Standard error is represented in the figure by the error bar on each column.

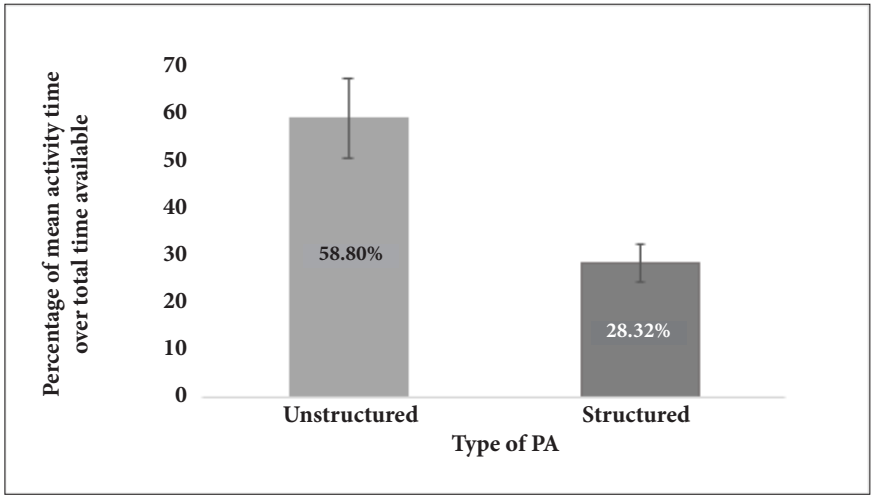

Figure 3. Difference in mean percentages of time spent engaged in activity during the total available time of unstructured and structured PA opportunities. A statistically significant difference was found for the percentage of time spent active in unstructured versus structured physical activity. Standard error is represented in the figure by the error bar on each column.

Children's Perceptions of Unstructured and Structured PA

Interview data revealed that choice and connectedness were the most important determining factors that influenced the children's preference for different PA opportunities. For the purpose of this study, the psychological needs of autonomy and relatedness were most evident.

Unstructured PA. The children described unstructured PA opportunities as their favorite component of the ASP. Eleven of the 24 participants indicated that they most enjoyed the unstructured "free time" component. When asked why free time was their favorite, almost all of the children described that free time provided their choice of the activities in which to engage. For example, Hadley (age 11, Grade 5) stated, "That you can do whatever you want and you don't have to do what they tell you" (Interview 22). As another example, Dylan (age 11, Grade 5) specified, "Free time is the best, 'cause I get to do what I want" (Interview 5). A number of the children explained that choice and freedom were the primary reasons for preferring

unstructured over structured PA. Patrick (age 12, Grade 5) detailed, "You are able to choose what you're able to do and choose your intensity" (Interview 15). Another participant, Sam (age 10, Grade 5), stated, "You don't have to worry about stuff people tell you . . . I don't like being told what to do" (Interview 4)

Structured PA. Among the 24 children interviewed, 8 identified the structured PA opportunities as their favorite component. The children described the social context of participation with friends as the primary reason for their preference of this type of activity. When asked to respond to the question, "What is your favorite thing about the ASP?" Laura (age 11, Grade 5) stated,

> Playing all the games and getting to interact with everyone . . . in free time, we get to play with whoever we want and with our mentor, but I like physical activity more because I get to socialize with a lot more people. (Interview 12)

Similarly, Sam (age 9, Grade 3) said, "You get to have help, and it's going to go up and down and you have to tell them and you have to sort of work together. Like tell each other and communicate with each other" (Interview 8). These children consistently described playing and working together with friends and mentors as a primary factor for their preference of the structured PA opportunities.

Conclusion. Nearly half of the participants either selected unstructured free time or structured PA lesson as their favorite component of the program. For unstructured free time, choice was the focal point, as those who selected the structured PA typically enjoyed the ability to interact and connect with their friends and mentors. A major finding across interview data was that the children preferred physically active program components over all others. The only two components the children identified as favorites were free time and the PA lessons, which were the only two components of the program that strictly focused on PA. Taken together, results indicated that being active was what these children enjoyed the most. This is a considerable finding, as research indicates that children who are at risk generally do not find PA enjoyable (Deforche, De Bourdeaudhuij, & Tanghe, 2006; Rukavina & Li, 2008). Put simply, the children in this program preferred being physically active during the ASP.

Discussion

The purpose of this study was to examine children's activity levels during unstructured and structured PA and their perceptions of these PA opportunities in the ASP program. Research suggests that the allocation of PA through multiple outlets can assist children and adolescents with accumulating the necessary daily PA recommendations (Beets et al., 2009; Brusseau et al., 2011). This study provides new insights about the activity levels of children who are at risk and participate in structured and unstructured PA during an ASP.

The Value of Unstructured PA Opportunities

Mean steps per minute. A major finding of this study was the difference between the mean steps per minute of available time within the ASP during unstructured versus structured PA components. In comparison, Gutierrez et al. (2016) investigated structured physical education and recess contributions through step counts. Similar studies examining the PA contributions of recess and PE found elementary students "took 50.9–59.5 steps/min during their recess and PE times" (Brusseau et al., 2011; Tudor-Locke et al., 2006). The children in this study took fewer steps than children in other investigations. One possible explanation is that children in this study were identified as at risk.

The statistically significant difference between mean steps per minute accumulated by participants in this study indicates that unstructured PA opportunities, as opposed to structured PA opportunities, can provide a significant contribution to achieving high rates of PA engagement for youth who are at risk. The findings of this study support this and may indicate that ASPs that offer PA opportunities are a viable option to increase the total amount of steps per minute for children. Emphasizing the promotion of unstructured PA outside of school may increase the total amount of activity time and thus enhance PA and health behaviors.

Mean percentage of activity time. On average, children in the ASP engaged in a higher percentage of total activity time 58.8 ± 14% during unstructured PA components. Consistent with other studies, this study reveals that children in ASPs accumulate meaningful PA during unstructured PA (Beighle et al., 2006; Tudor-Locke et al., 2006). Consistent with the youth in Trost et al. (2008), in this study

youth who are at risk attained nearly 60% of total activity time, with respect to the total time of unstructured PA available. This finding suggests that interventions such as this ASP could consider the contributions that unstructured PA formats may provide children. While the children were engaged on average 58.8% of the total time available during the unstructured components of the ASP program, and only 28.32% during structured PA, it stands to reason that youth who are at risk may benefit more from unstructured PA opportunities during ASPs.

Enjoyment and autonomy (SDT). The tenets of autonomy and competence within SDT (Deci & Ryan, 2004) were especially pertinent in this study. These can help to explain children's motivation to engage in specific PA behaviors during the ASP. Among the 24 participants interviewed, 14 described choice as a motive for their preference of unstructured versus structured PA. Autonomy supportive environments provide individuals with choice, independence, control, and/or freedom to perform intrinsically. The findings indicate that autonomy is a critical factor to the children's desire to be physically active, as their preference for unstructured PA, and the ability to choose their activities, translated to increased measures in all activity variables (i.e., steps per minute, minutes in MVPA, total activity time).

The Value of Structured PA Opportunities

Mean percentage of MVPA. This study found that participants achieved a higher percentage of time actively engaged in MVPA during unstructured PA opportunities, in comparison to structured PA. Fairclough, Beighle, Erwin, and Ridgers (2012) argued that health-enhancing PA levels in the after-school segment predominantly come through structured PA, which is similar to the findings in this study. The findings were consistent with those in Trost et al. (2008), who reported higher levels of MVPA during unstructured free-play sessions.

The percentage of time children in the ASP spent in MVPA during unstructured PA (13.31%) components of the ASP nearly doubled the percentage of time spent in MVPA during structured PA (6.94%). Trost et al. (2008) found children's MVPA levels during structured PA opportunities to be 24–55% lower on average than during structured PA sessions. Various explanations could clarify

the differences between findings; however, in this study, youth spent a higher percentage of time spent actively engaged in MVPA during structured PA. Overall, these findings suggest that children may not require structured environments to accumulate MVPA; however, the findings also indicate structured PA opportunities allow children to accumulate MVPA. Through different forms, activities structured or organized to increase PA can assist children with meeting the national PA recommendations, including the ability to maximize the benefits received.

Enjoyment and relatedness. Approximately half of the children (11 of 24) articulated that having the ability to interact and connect with others was the reason they preferred the structured PA component. Motivation to be physically active during structured PA was often conveyed through descriptions of peer relationships, reflective of SDT's (Deci & Ryan, 1985) tenet of relatedness. Several studies have demonstrated the contributions that physical education, recess, and ASPs provide and the extent to which positive relationships with peers can positively affect intrinsic motivation and variables related to engaging in PA within these contexts (Blankenship, 2008; Ullrich-Frenc & Smith, 2006; Vazou, Ntoumanis, & Duda, 2006). This was certainly present for a majority of participants within this study. Perhaps this calls for the development or creation of an environment that fosters relatedness, which may enhance or increase enjoyment and engagement in PA. Apparently, contextual social factors of structured PA that encourage relatedness may be key for some children to pursue PA for their own motivation and enjoyment. Creating structured environments fostering this basic psychological need of relatedness has utility in the development of positive perceptions of PA in youth. Health professionals and practitioners must seek methods and strategies to deliver quality PA opportunities that develop the motor skills, knowledge, beliefs, and attitudes for lifelong health-enhancing behaviors. Ultimately, the effect of unstructured PA on activity engagement could shed light on how to stimulate continued participation. If the primary goal of a program is to increase children's PA, then perhaps utilizing activities that are more unstructured in nature can assist with reaching this objective. Unstructured PA may be a viable option for increasing children's and adolescents'

PA levels, when delivered in a safe and positive motivational climate that invites high levels of PA engagement.

Limitations. This study had several limitations. It examined children's PA levels through quantitative data analysis; therefore, a small sample size does not provide enough significant power. Power increases the ability to detect a real difference or relationship. Running a repeated-measures ANOVA can assist in accounting for this, as running a test "within-subjects" provides justification of the small sample size.

A second limitation involved an internal threat to validity. This limitation was the threat of instrumentation with the use of pedometers to capture specific measures of PA in youth. Specific techniques discussed in the methodology were employed to control for instrumentation problems associated with pedometers. The limitation of instrumentation can also present the Hawthorne effect, in which the participants alter their PA due to the utilization of the pedometer.

A third limitation was the unpredictability of ASPs. Persistent problems arise through the inconsistencies related to programming. One of these inconsistencies is participants' attendance due to school events, sporting events, and sickness. Future research should focus on specific programming needs that allow ASPs to operate and function in a consistent, unwavering manner.

Conclusions and Implications for Practice

Based on these findings, it is suggested that practitioners examine alternative methods to increase the daily PA levels of youth. ASPs with the goal of increasing total PA time for children can benefit from including unstructured PA opportunities. The opportunity to enhance autonomy and relatedness within the dynamic nature and context of ASPs could serve to support children's motivation to engage in PA. PA opportunities are a viable way of enhancing children's feelings of autonomy and relatedness, which can be implemented into any type of after-school curriculum/program in which youth who are at risk participate. Practitioners should not view structured and unstructured PA opportunities in opposition of one other, but rather they need to choose between these activity formats. Both should be used for maximum PA benefits and motivation toward

PA. The concern for the need for increased PA in children and adolescents is paramount. Offering children opportunities to engage in PA in a variety of unstructured and structured formats, ASPs could help children to reach the recommendations of daily PA. All things considered, the answer is not structured or unstructured PA. Both structured and unstructured PA opportunities used in conjunction not only maximize PA but also ensure maximum chances of health benefits and an increase in children's motivation toward PA.

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PHYSICAL ACTIVITY

Enhancing "Coopetition": A Model for Physical Activity Courses

Dennis Cobler, Rebecca Buchanan, Beverly Sheddan, Joy Scruggs, Beth Funkhouser, Danny Carter

Abstract

This study explored the extent to which nontraditional physical activity courses and student experiences reflect a pleasure and participation sports model. The theoretical framework for this qualitative study was based on the pleasure and participation sports model (Coakley, 2017). Data via 20 observations and 20 interviews were gathered from participants enrolled in a small liberal arts college. Tenets of the pleasure and participation model were evident, along with a sense of coopetition. College student experiences of physical activity in courses is an important area of research that could lead to increased physical activity levels. It has been demonstrated that physical activity in young adulthood can have a health-promotion effect throughout life. This research indicates that a diverse range of physical activity courses can have short- and long-term positive effects on student wellness.

Dennis Cobler is an associate professor, Athletic Training Department, Emory & Henry College. Rebecca Buchanan is an associate professor, Health & Human Performance Department, Emory & Henry College. Beverly Sheddan is an instructor, Health & Human Performance Department, Emory & Henry College. Joy Scruggs is an instructor, Health & Human Performance Department, Emory & Henry College. Beth Funkhouser is an instructor, Athletic Training Department, Emory & Henry College. Danny Carter is a teaching associate, Health & Human Performance Department, Emory & Henry College. Please send author correspondence to rbuchanan@ehc.edu

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Colleges and universities offer activity courses in a variety of ways. While some offer them simply as electives, others require them as part of a physical education or other human performance major. Yet others require them as part of a graduation requirement, often tied into a wellness course. The rationale behind such courses, whether offered as electives or requirements, is often grounded in scholarly research supporting the benefits of a physically active lifestyle (Donatelle, 2019; Thygerson & Thygerson, 2019). This is especially important since physical activity in young adulthood can affect health-promotion efforts throughout life (Beaudoin, Parker, Tiemersma, & Lewis, 2018; Foster & Appleby, 2015). Therefore, when activity courses are required of the general population, higher education institutions need to examine the type of environment in which these classes are conducted to create a positive experience for all students (Beaudoin et al., 2018). Although a substantial amount of research explores student attitudes and experiences at the elementary and secondary school levels, less empirical evidence at the college level exists of student attitudes and what constitutes a positive experience in various types of physical activity courses (Li, Chen, & Baker, 2014).

This research took place took place at a small liberal arts college with a population of approximately 1,000 students. The college had recently revamped its general education curriculum to include courses that faculty members felt were imperative to providing a holistic student experience. This process included the inclusion of courses that aligned with goals for the newly adopted Core Curriculum. One goal was to "be strong: value and pursue the benefits of lifelong physical fitness, balance in work and recreation, and psychological well-being" (Emory and Henry College, 2017). As a result, one of the outcomes was that beginning in the 2009–2010 academic year, all students would be required to take a wellness course to expand their knowledge of the benefits of lifelong physical fitness. In addition to the wellness course, students were also required to take two activity courses, providing them with opportunities to participate in a variety of physical activities. The goal was to support Core Curriculum initiatives by providing a wide range of physical activity offerings, encompassing traditional and nontraditional experiences, which would meet the diverse needs of the student

population. This is important since research suggests that declines in physical activity are often linked to negative experiences in physical education and sport, which at the secondary level "continues to be dominated by competitive team sports" (Cardinal, Yan, & Cardinal, 2013; Ferry & McCaughtry, 2013, p. 375; Li et al., 2014). Therefore, this project examined whether the nontraditional physical activity courses aligned with a "pleasure and participation sports model" (Coakley, 2017) and explored student experiences in relation to the model. The impetus for this study came about as a result of reviewing presurvey data completed by students enrolled in the wellness course. Beginning with the adoption of the newly revamped Core Curriculum, first-year students who were enrolled in the mandatory wellness course were surveyed regarding what type of activity courses they perceived to be the most beneficial to them. One key question posed was, "When you participate in physical activity, do you prefer a competitive or non-competitive atmosphere?" Overall, 67.5% of students preferred a competitive environment, while 32.5% preferred a noncompetitive atmosphere. However, by gender, 86.3% of males preferred a competitive environment, while 50.8% of females preferred a noncompetitive environment. Although traditional and nontraditional activities can be taught to reflect Coakley's pleasure and participation sports model, this study focused on the extent to which nontraditional physical activity courses and student experiences reflect a pleasure and performance sports model. According to Coakley (2017), this model can involve competition but has a primary emphasis on "connections between people and personal expression through participation" (Coakley, 2017, p. 63).

This study was funded by the McGraw-Hill Publishing Company's College and University Instructional Physical Activity Program (C/UIPAP) Research Award. This grant is provided with the intent of facilitating and supporting research efforts by administrators, faculty, instructors, and researchers with an interest in enhancing C/UIPAP instructional environments. The purpose of the study was twofold: (1) to determine the extent to which nontraditional physical activity courses reflect the pleasure and participation model (Coakley, 2017) and (2) to determine the extent to which student experiences in the course reflect characteristics of that model.

The study explored college student experiences in courses offering nontraditional sport and/or physical activity opportunities. Nontraditional refers to sport or physical activities that are not traditionally offered in public schools throughout the United States as part of the regular physical education curriculum. Archery, Adventure Training, Ballroom Dancing, Bowling, Fly Fishing, Hiking/Backpacking, Kayaking, Rock Climbing, Self Defense, and Yoga comprised the courses included as part of the study. Although these types of opportunities to engage in physical activity have become more popular in recent decades, many physical education and extracurricular programs in the U.S. public school system continue to emphasize traditional competitive team sports even though research suggests that "the healthiest of all physical activities [are] rhythmic, non-competitive exercises" (Coakley, 2017, p. 66; Ferry & McCaughtry, 2013). In comparison to traditional courses, the nontraditional options provided opportunities for more inclusive processes with a de-emphasis on competition against others (Buchanan, 2011; Coakley, 2017).

Two key research questions were used: In what ways do the nontraditional physical activity courses reflect the pleasure and participation sports model? and To what extent do student experiences in the course reflect characteristics of the model? Coakley's (2017) pleasure and participation sports model "emphasizes democratic leadership, inclusive participation, and the use of cooperation and competition with others to develop and test skills in a healthy and enjoyable context" (p. 646). In contrast, the power and performance sports model is defined as a "framework for an organizational structure emphasizing hierarchical leadership, exclusive participation, and the use of strength, speed, and power to push human limits and dominate opponents in the quest for competitive success" (Coakley, 2017, p. 647).

The theoretical framework for this study was based on the work of noted sport sociologist Jay Coakley. He developed the pleasure and participation model in contrast to the power and performance model in an effort to more fully understand and explain the wide variances in sport (Buchanan, 2011). The models have been included in multiple editions of Coakley's popular text *Sports in Society: Issues and Controversies* since 2001. The variances outlined in each model often

result in different experiences and patterns of socialization outcomes for those who are participating (Coakley, 2017). For many, past experiences in organized sport and physical education have aligned more with the power and performance model which emphasizes defeating others and dominating opponents. Those who are athletic excel in this type of environment. Those who are not as athletic often become discouraged and feel less competent, which minimizes their desire and motivation to be physically active. Yet research has indicated that rates of physical activity increase when individuals feel competent and enjoy the activity (Bai, Allums-Featherston, Saint-Maurice, Welk, & Candelaria, 2018; Eberline, Judge, Walsh, & Henley, 2018). Tenets of the pleasure and participation model include an emphasis on good health, enjoyment, personal expression, social relationships, and creating an inclusive environment, as opposed to an emphasis on defeating others and dominating opponents. The characteristics of this model also align with various dimensions of wellness such as social, emotional, environmental, and physical, thus offering the researchers an opportunity to explore the potential for enhancing overall physical activity levels and well-being during the college experience and beyond.

In today's society, it is important to understand college student experiences of physical activity in courses, which could lead to increased physical activity levels. The cost of physical inactivity is staggering. Conservatively estimated, physical inactivity costs health care providers in excess of $53.8 billion in 2013, and there is every expectation these numbers will continue to steadily increase (Ding et al., 2016). These figures include the direct cost of treatment of sickness and disease associated with inactivity and the indirect costs caused by lost productivity and foregone earnings caused by premature mortality. Perhaps most troubling is the end result of physical inactivity. The World Health Organization (2009) estimates that 3.3 million people die each year due to physical inactivity, making it the fourth leading underlying cause of death.

Along with the economic cost, research has suggested that physical inactivity is an important risk factor for the development of a variety of chronic diseases. A wide range of conditions such as coronary heart disease, hypertension, type 2 diabetes, colon cancer, depression and anxiety, hip fractures, osteoarthritis, and numerous

other cancers have been linked to physical inactivity (Donatelle, 2019; Thygerson & Thygerson, 2019). On the other hand, it has been demonstrated that physical activity in young adulthood can have a health-promotion effect throughout life (Beaudoin et al., 2018).

In addition to the long-term benefits, many benefits of physical activity can also positively affect students while they are in college. In terms of academic success, research suggests that physical activity can increase the capacity for students to learn (Institute of Medicine, 2013; Ratey, 2008). Along with benefits related to cognition, engaging in regular physical activity can help college students to control stress and can increase self-esteem (Donatelle, 2019). Therefore, it is important to explore what types of opportunities for physical activity are offered at the college level, along with students' interpretations of their experiences. This process can greatly influence student choice as related to their involvement (or lack of) in physical activity during the college years and throughout the life span. Initiatives that encourage and support physical activity endeavors for college students also align with the SHAPE America position statement, which recommends that all colleges and universities include a physical activity instructional program as a strong and integral part of the academic curriculum (National Association for Sport and Physical Education, 2007). Additionally, the NASPE (2009) *Appropriate Instructional Practice Guidelines for Higher Education Physical Activity Programs* has provided guidance for physical activity programs in higher education and encourages courses that "help students gain the skills and knowledge to be physically active throughout their lives, differ from those of intramurals and athletics, and are sensitive to students' interests and address their overall well-being" (p. 5). According to Beaudoin et al. (2018), "the college environment is pivotal to strengthening positive lifelong physical activity" (p. 8). Given the plethora of research supporting efforts to understand and encourage physical activity, this research study further contributes to the scholarly literature regarding how expansion of opportunities that do not overemphasize competition can result in positive student experiences (Graham, Elliott, & Palmer, 2016).

Method

Participants

Interview participants were randomly selected students who had completed an activity course at the college during the 2011–2012 academic year. These courses included activities such as Yoga, Fly Fishing, and Kayaking. The participants were 11 females and nine males who ranged in age from 18 to 26 years. The researchers coordinated meeting times with each instructor to fully describe details of the study to students enrolled in the course. Students who agreed to participate signed a consent form. This form also provided information regarding their right to cease participation in the study at any time.

Data Collection

Following institutional review board approval and obtaining informed consent from participants, the researchers conducted the study by collecting data from 20 observations and 20 semistructured one-on-one interviews during the 2011–2012 academic year.

Class Observations

For the observations, a minimum of two members of the research team visited each activity class on different occasions to observe the group dynamics. All used the same observational instrument (Appendix A) designed by the team for the purpose of exploring the extent to which tenets of Coakley's pleasure and participation model were evident. The specific tenets included democratic leadership, inclusive participation, cooperation and competition, and a healthy and enjoyable context (Coakley, 2017).

Evidence of *democratic leadership* was observed in the extent to which students had input on choices related to the activity focus, partner involvement, differentiated instruction, and peer feedback. Observation data related to democratic leadership also included consideration for whether participants adhered to the rules and the reaction of the group to such behavior when students did not. The ability of the students to resolve disputes or make collective decisions without the involvement of the instructor was also examined.

For *inclusive participation*, evidence of encouragement both verbally and nonverbally among the participants was observed. The research team also observed for signs of exclusion such as off-color jokes, gender discrimination, and racial bias. The level of participation by all students, whether or not it was to their fullest possible extent, was also noted.

For *cooperation and competition*, the research team observed encouragements to participate among the students. Team members also noted if an emphasis was placed on self-improvement in the form of competing against oneself rather than an emphasis on competing against others. Often, members of the team observed there was little pressure for students to attempt difficult skills if they did not feel ready. There was very much an atmosphere of working at your own pace and also evidence of other students helping one another if any student struggled to master a new skill.

Healthy and enjoyable context was the easiest tenet to observe. Research team members consistently noted throughout observations that even when students were challenged by a new skill, smiles and laughter still abounded. Observation data indicated that participants felt comfortable and content in their surroundings and were offered opportunities to make mistakes during the skill development process without connotations of negative repercussions as a result.

Participant Interviews

The interview participants (n = 20; 11 female, 9 male) were randomly selected from the rosters of each course. One male and one female student from each course, with the exception of Self Defense for Women, as it is a gender-specific course, were interviewed via a semistructured protocol (Appendix B). The audio-recorded interviews focused on a few main ideas such as course selection, physical activity, role of sports in each person's life, as well as some questions more focused to the study's framework exploring the domains of democratic leadership, inclusive participation, and finally cooperation and competition in a health and enjoyable context.

Initial questions from the interview focused on why the student chose to take that course in particular, with a focus on his or her favorite and least favorite experiences in the course, as well as how it differed from his or her previous physical education experiences. Some of the other questions asked students to define physical

activity and sports. The research team also asked participants about their preferred environments and types of activities when engaging in physical activity. The final questions explored how the various classes helped promote positive behaviors within the college environment.

Data Analysis

Upon completion of the observations and transcription of the participant interviews, each researcher reviewed the mass of data for trends and themes through open coding. Peer debriefing and member checks strengthened validity and established trustworthiness of the data collection and analysis. Researchers individually read and identified common themes emerging in the data sets and then met several times as a group to compare findings. Themes were reviewed for relevance and consistency to the pleasure and performance model. As a group, we compiled the noted trends in the qualitative data. Through discussion and additional analysis, the research team developed through code mapping the categories that eventually melded into the iterations of analysis.

Data analysis procedures included a constant comparative method in which conceptually congruent categories were constructed and multiple iterations of analysis developed (Anfara, Brown, & Mangione, 2002). This involved code mapping and the creation of categories that were conceptually congruent. The first iteration included words or phrases that were representative of data collected. Through interviews and observations, several key terms that provided a foundation for students' experiences were identified. Some of those key terms included *welcoming*, *teamwork*, *engagement*, and "it's a group thing." A departmental goal is to instill a lifelong love of activity. These expressions indicate that the department is on the right track.

The second iteration included four categories that defined the rubric/observations: democratic leadership, inclusive participation, and cooperation and competition in a healthy and enjoyable context. All categories were developed based on Coakley's (2009, 2015) pleasure and participation model.

The third iteration was leveling the playing field through coopetition. To best describe Coakley's pleasure and participation model in one term, the researchers chose "coopetition," which is defined as

"simultaneous combination of cooperative and competitive behavior" (Tsai, 2002, p. 179). Coopetition synthesizes all of Coakley's key concepts: "democratic leadership" and "inclusive participation" with the opportunity for competition and the development of skills in a "healthy and enjoyable context" (2009, p. 674).

Results and Discussion

This study explored college student experiences in courses offering nontraditional sport and/or physical activity opportunities. The purpose was twofold and consisted of determining the extent to which these physical activity courses reflect the pleasure and participation model (Coakley, 2017) and the extent to which student experiences in the course reflect characteristics of the model. The model emphasizes good health, enjoyment, personal expression, social relationships, and creating an inclusive environment, as opposed to an emphasis on defeating others and dominating opponents. Category construction through open coding and code mapping provided a systematic process through which multiple iterations of analysis were developed.

Results indicated that tenets of the pleasure and participation model were evident to a large extent in all of the courses. The environment, instructors, instructor philosophies, and types of sports provided a foundation for democratic leadership and inclusive participation in a healthy, enjoyable context. In terms of the environment, several participants expressed their positive associations with being in a relaxed and welcoming environment that was not focused solely on competition. This provided an "atmosphere of cooperation in which everyone achieves a common goal," as opposed to "an atmosphere in which the success of some is dependent upon the failure of others" (Buchanan, 2011, p. 25). Participants also expressed their positive associations with an environment providing them the opportunity to be outside and in nature. For many, this experience was much different than the gym environment associated with public school physical education and physical activity.

Data indicated that along with the environment, the instructors and their instructional philosophies influenced the extent to which students interpreted their experiences as positive. For example, students overwhelmingly referred to the instructor's ability to provide encouraging and individualized instruction from a nonjudgmental

approach. Instructors also emphasized personal goal setting and skill mastery, as opposed to structuring class sessions focused mainly on competition. Instructors were described as patient, caring, and interested in helping every student succeed. The description of instructors in this study mirrors recent findings by Garn et al. (2014) in relation to the description of club leaders in an after-school physical activity program. Garn et al. found that "successful club leaders were viewed to be highly caring and supportive" (p. 122). Also contributing positively to participant experiences in this study was the level of instructor competence in their ability to teach and their knowledge of the specific physical activity. Providing students with opportunities to become proficient at and enjoy physical activity emerged as a core philosophy of all of the instructors.

The various types of sports offered also supported themes included in the second iteration of analysis. For example, research has shown that students are more likely to indicate positive experiences when they feel accepted and are able to fully participate in activities (Coates & Vickerman, 2008). The types of sports offered, such as kayaking and fly fishing, created more of an inclusive environment that required a different kind of physical skill set than traditional sports such as basketball. This is important given that many individuals choose not to participate in physical activity if they do not feel confident and competent (Cardinal et al., 2013; Ferry & McCaughtry, 2013). As noted by Azzarito and Solomon (2005), declines in physical activity are often linked to negative experiences in physical education and sports. Research suggesting that physical inactivity is an important risk factor for a variety of chronic diseases also provides the impetus for the creation of more diverse opportunities for individuals to be physically active (Donatelle, 2019; Fernandes & Zanesco, 2010; Thygerson & Thygerson, 2019).

Participants in the study also indicated that their experiences promoted within the college environment positive behaviors and feelings of well-being that expanded beyond involvement in their respective courses. Students stated that interacting and developing relationships with peers, building values, increasing confidence in physical abilities, and encouraging others were some of the positive outcomes transcending beyond their class participation. This aligns with the concept of wellness, which includes mental, physical, and

social well-being encompassing the body, mind, and spirit in ways that optimize the full capabilities of individuals (Hattie, Myers, & Sweeney, 2004). Garn et al. (2014) noted similar benefits that highlighted the "importance of establishing positive and caring social environments" that promote student engagement and personal goal setting in physical activity (p. 129). Since students in this study were required to complete two physical activity courses in conjunction with a mandatory wellness course, the findings associated with a high level of well-being are encouraging.

The overriding theme throughout the study evolved around coopetition. This sense of coopetition (Brandenburger & Nalebuff, 1996; McCarthy, Carleton, Krumpholz, & Chow, 2018) was developed as the third iteration of analysis through data indicating that a combination of cooperation and competition. In the business sector and the realm of education, coopetition has proven to be an effective strategy associated with higher levels of academic attainment, growth, and performance (Adnett & Davies, 2003; Tsai, 2002). Specific to the physical activity courses, through this type of experience students felt empowered to challenge themselves and one another in a low-pressure environment. As a result, students were provided with greater opportunities to experience a sense of flow, which requires a balance of skill and challenge to produce enjoyment. This balance successfully illustrates the concept of too much or too little skill or challenge, which can result in an overall negative experience (Csikszentmihalyi, 1990).

Implications from the study suggest that a diverse range of physical activity courses appeals to students of varying athletic ability and can have both short- and long-term positive effects on student wellness. Research such as this should continue to further explore the types of opportunities offered at the college level, along with students' interpretations of their experiences. This process can greatly influence student choice as related to their involvement (or lack of) in physical activity.

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Appendix A
Pleasure and Performance Model
Observational Instrument

Tenet	Example	Not applicable	Never/ not observed	Rarely	Sometimes/ frequently	Consistently
Democratic Leadership						
Group members have choices and/or input and share ideas with one other	Members have choice of partner, choice of activity; share feedback with one another on skill development					
Group members resolve conflicts amicably in a manner that encourages honestly, openness, flexibility, and compassion	Members adhere to rules of fair play; no cheating; observes sport/activity etiquette					
Inclusive Participation						
Group members participate in sport/ activities equally, to the fullest extent possible	No inclusion (or sense of inclusion) due to race, class, gender, etc.; no off-color jokes, etc.					
Group members support efforts of one another in encouraging and positive ways	Positive verbal reinforcements among members such as "good job" or "good try"					
Cooperation and Competition						
Group members work with one another in a constructive manner to participate in class activities	Group members speak up in class; problem solve; encourage others to participate					

Tenet	Example	Not applicable	Never/ not observed	Rarely	Sometimes/ frequently	Consistently
Group members participate in sports and activities in which emphasis is placed on competing against oneself	Self-improvement is emphasized and practiced to a greater extent than beating someone else					
Healthy and Enjoyable Context						
Group members express pleasure or satisfaction with the class and/or activities offered through verbal and/or nonverbal expressions	Laughter, smiles, statements such as "this is fun"					
Group members participate in activities that support concepts related to wellness and lifetime activity	Activities offered can be continued later in life; adulthood					

Appendix B
Pleasure and Performance Model
Sample Interview Protocol

Topic domain: Course Selection

Leadoff question:
Why did you decide to take this course?

Possible follow-up questions:
1. How did you find out that the course was offered?
2. Tell me about physical education courses you've had in the past prior to college.
3. Is this course different?
4. If so, how?
5. What have been some of your favorite experiences in the course?
6. Why?
7. What have been some of your least favorite experiences in the course?
8. Why?
9. Is there anything you would do to make the course better?

Topic domain: Physical Activity

Leadoff question:
Can you tell me about your physical activity level?

Possible follow-up questions:
1. How would you define "physical activity"?
2. What are your favorite types of physical activity?
3. Tell me about your preferred environment when participating in physical activity.

Topic domain: Sports

Leadoff question:
Can you tell me about sports in your life?

Possible follow-up questions:
1. What appeals and/or does not appeal to you about sports?
2. How would you define sports?

3. What kind of sports do you enjoy most?
4. Why?
5. From whom did you learn about sports and what kinds of messages did they leave with you?

Topic domain: Democratic Leadership

Leadoff question:
Can you tell me about your experiences in this class working with others?

Possible follow-up questions:
1. Relating to the above question, recall an incident if you can.
2. What does that experience mean to you?

Topic domain: Inclusive Participation

Leadoff question:
To what extent have you participated in the sports and activities offered in this class?

Possible follow-up questions:
1. Would you describe any activities in which you have not been able to participate?
2. Can you share a time, not necessarily related to physical activity, when you felt excluded from something?
3. If so, how did it feel?

Topic domain: Cooperation/Competition With Others in Healthy/Enjoyable Context

Leadoff question:
What would you describe as the ideal type of competitive environment in sport and physical activity?

Possible follow-up questions:
1. Can you tell me about competition in this class?
2. How is competition in this class similar or different to your competitive experiences in previous physical education classes or sports?
3. Has there ever been a time when you did not enjoy competition?
4. If so, can you describe?

5. Does this class provide a healthy and enjoyable environment?
6. If so, to what extent?

Topic domain: Summary/Debriefing

Leadoff question:
Do you feel this course has promoted your positive behaviors within the college environment? If so, can you explain how and/or provide an example?

Possible follow-up questions:
1. Is there anything else you would like to add?
2. Do you have any questions about the interview?

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METHODOLOGY

Lifetime Participation Methodologies Implemented in Physical Education

Kristen Naomi Morgan

Abstract

Early experiences in physical education (PE) either encourage or repress lifelong participation in physical activity (PA). PE programs supportive of lifelong participation are grounded in self-determination theory, achievement goal theory, and National Standards for PE and have PE teachers who overcome barriers by integrating the theories and standards. The purpose of this study was to educate PE teachers on lifetime participation methodologies and to investigate their perception and integration of these practices. The participants included eight PE teachers in Mississippi who were interviewed about their perceptions and levels of integration. Data analysis revealed themes indicating that teachers integrate a moderate level of lifetime participation methodologies in PE. The majority of the participants agreed lifetime participation methodologies were worthy of integration; however, there were a few contradictions in the occasional perceptions that the barriers were too powerful to overcome or coaching duties took priority.

Physical activity (PA) declines dramatically from childhood (6- to 11-year-olds) to adulthood (20+-year-olds) in the United States (Troiano et al., 2008). This decline in PA cultivates numerous health-related problems, yet 70% of youth and 80% of adults in America do not meet the recommended daily dose of PA (Centers for Disease

Kristen Morgan is a doctoral student, School of Kinesiology and Nutrition, University of Southern Mississippi. Please send author correspondence to kristen.connor@usm.edu

Control and Prevention, 2015a, 2015b). It is essential that health and physical educators encourage a reversal of this decline while teaching the PA health benefits. PA is the leading prevention of 35 chronic conditions, including obesity, type 2 diabetes, coronary heart disease, stroke, hypertension, rheumatoid arthritis, osteoporosis, three types of cancer, bone fractures, depression, and anxiety (Booth, Roberts, & Laya, 2012). Nevertheless, physical education (PE) is fundamental to the prevention of chronic conditions related to a lack of PA, providing support for motor skill development and PA opportunities.

Early experiences in PE can shape lifelong participation in PA (Ennis, 2010, 2017; Esslinger, Pyle, & Hey, 2014; Green, 2014; Kirk, 2005). Children who were physically active during school years were more likely to continue physical activity into adulthood (Tammelin et al., 2014). Lifetime participation results from PE teachers who intentionally and purposefully implement methodologies that nurture and motivate students (Ennis, 2017). However, PE programs have also been reported to be ineffective in promoting healthy lifestyles (Harris, 2014). Subsequently, PE teachers need information on promoting lifetime participation in PA to support healthy lifestyles. Therefore, the purpose of this study was to educate PE teachers on lifetime participation methodologies and to investigate their perception and implementation of these practices.

For this study, a lifetime participation model (Table 1) that simplifies the methodologies leading to lifetime participation in PA was prepared. Lifetime participation methodologies do not include programming a PE class under the public health approach (Ennis, 2017), focusing on target heart rate, exercise prescription, nor conditioning. The lifetime participation model creates a PE class that implements motivational and supportive aspects of achievement goal theory (Nicholls, 1989), self-determination theory (Deci & Ryan, 1985), and the National Standards for K–12 PE, and helps educators to overcome barriers that may prevent the use of the theories and standards.

Achievement goal theory (Nicholls, 1989) grounds the first three principles in the lifetime participation model: increase motivation, decrease competition, and increase choice and cooperation. Increasing motivation is essential for students to be physically active for a lifetime. Achievement goal theory (Nicholls, 1989) explains

Table 1
The Lifetime Participation Model

Foundation of teaching methodology	Teaching methodology
Achievement Goal Theory	Increase motivation
	Decrease competition
	Increase choice and cooperation
Self-Determination Theory	Increase perceived competence
	Make PE enjoyable
National Standards for K-12 PE	Physically competent teacher
	Health knowledge
	Overcome barriers

the effects of goal orientations and motivational climates on motivation to learn. Goal orientations are either ego/performance, when students strive to be better than classmates for a social comparison, or task/learning, when students strive to be better than themselves. For example, students who participate in sports for social recognition are ego oriented and students who participate in sports for improvement are task oriented. Task-oriented students have higher intrinsic motivation and are more likely to enage in PA as adults (Jaakkola, John Wang, Soini, & Liukkonen, 2015; Standage, Duda, & Ntoumanis, 2003), while ego-oriented students focus less on individual effort and are likely to quit PA once they fail to win and they tend to blame outside factors (Ennis, 2010). Increasing task oriented motivation is crucial, leading toward lifetime participation in PA. Since motivation to participate in PA drops with age (Ball & Bice, 2015; Molanorouzi, Khoo, & Morris, 2015), it is especially important for teachers to enhance motivation in PE.

Motivation is not solely up to the students, instead teachers can create an atmosphere/class climate that nurtures motivation (Baric, Vlasic, & Cecic Erpic, 2014; Ntoumanis, 2001; Standage et al., 2003). Class climates are either mastery, which encourage hard work, learning, cooperation, task mastery, and student involvement in the learning process, or performance, which focus on competition, punishing mistakes, and comparing student to each other (Ames, 1992;

Nicholls, 1989). Mastery climates support lifetime participation in PA, while performance climates are contrary.

Decreasing performance climates (decreasing competition and comparisons) would be advantageous toward lifetime participation in PA. Comparing students to one another has created negative self-perceptions and decreased motivation to participate (Taylor, Spray, & Pearson, 2014). Comparison and competition activities (e.g., dodge ball and climb-the-rope) have continuously been on the "Hall of Shame" list of activities that should be avoided in PE (Williams, 2015). Competition is not awful, but children have reported dissatisfaction with PE that focuses on repetitive skill-based activities that lead to an overemphasized competitive game (Aggerholm, Standal, & Hordvik, 2018; Ennis, 2010; Larouche & Shephard, 2015). On the contrary, Bernstein, Phillips, and Silverman (2011) revealed enjoyment in competitive activities in high-, medium-, and low-skilled students. However, students were not developing the skills necessary to compete and reported waiting, standing around, and lack of opportunity to succeed when participating in competitive games (Bernstein et al., 2011). To produce lifetime participation in PA, activities in PE should include the opposite—cooperation and small group activities that can be completed in adulthood.

Creating a mastery climate (increasing choice and cooperation) would be beneficial toward lifetime participation. Students have reported enjoyment when completing a task with cooperation in small groups with greater choice, flexibility, and more emphasis on participation as opposed to performance and physicality (Jaakkola et al., 2015; Larouche & Shephard, 2015). Mastery climates help students reach lifetime participation in PA by encouraging success, increasing perceived competence, and creating task-oriented motivation (Ntoumanis, 2001). To allow students to be physically active in the future, Standage et al. (2003) recommended that PE teachers promote a mastery-focused class structure that allows students to become more self-determined.

Self-determination theory (Deci & Ryan, 1985, 2000) grounds the next two principles in the lifetime participation model: increasing perceived competence and making PE enjoyable. Self-determination theory states self-determination is created when three basic needs are met: autonomy, relatedness, and competence (Deci & Ryan, 2000). Supporting these basic needs facilitates intrinsic motivation.

Individuals who are intrinsically motivated participate in PA for enjoyment, not for awards or social recognition, like those who are extrinsically motivated (Bénabou & Tirole, 2003). Autonomy is sensing control over outcomes, relatedness is experiencing social belonging, and competence is feeling effective and successful. Having competence in one's skill ability is essential for lifetime participation in PA (Ennis, 2017; Fletcher, Rasmussen, & Silverman, 2016; Stodden, Langendorfer, & Roberton, 2009). Competence may be the most important basic need for lifetime participation. Taylor, Ntoumanis, Standage, and Spray (2010) revealed perceived competence and self-efficacy were consistently predictors of lifetime participation intentions. The findings highlight the importance in PE of focusing on the need for competence while not sacrificing the needs of autonomy or relatedness (Taylor et al., 2010). Increasing perceived competence is essential for a person to being intrinsically motivated to participate in PA for a lifetime.

Students who feel competent in their motor skills enjoy PE more than do those who are less competent (Baric, Vlasic, & Cecic Erpic, 2014; Jaakkola et al., 2015). In an examination of the relationships among perceived competence, enjoyment, and interest in PE and goal orientation, children with higher perceived competence had significantly higher enjoyment levels in PE and were more task oriented (Baric et al., 2014). Consequently, enjoyment in PE is a by-product of increasing perceived competence and task-oriented motivation. Furthermore, enjoyment and effort in PE are greater in a class that focuses on motivation and autonomy than in a class without these affective outcomes (Wallhead, Garn, & Vidoni, 2014). Enjoyment in PE during school years has led to adult engagement in PA (Ladwig, Ekkekakis, & Vazou, 2018). Ladwig et al. (2018) retrospectively examined PE enjoyment levels from 1,028 adults in the United States. Attitude about PA, intention for PA, and engagement in moderate and vigorous PA were significantly and positively associated with enjoyment in PE and significant and negative associations were found with sedentary behaviors on weekdays and weekends. Hence, enjoyment in PE could lead to lifetime participation in PA, which makes it crucial for PE teachers to make PE enjoyable for all students.

The National Standards for K–12 PE provide teachers with the foundational skill competencies expected at each grade level. Not

only do the standards guide curriculum content, but they also support physical competence and teaching health knowledge, two principles in the lifetime participation model. Being physically competent and having the knowledge and skills necessary to demonstrate competent movement performances and health-enhancing fitness are mandatory for those in PE teacher education (PETE) programs according to SHAPE America's (2008) PETE National Standards and Guidelines. While PETE students have been more likely to exercise, weight lift, and diet compared to other majors (Krezeminska-Laudanska, 2014; Yager, Gray, Curry, & McLean, 2017), PE teachers may not be meeting the recommended PA levels (Esslinger et al., 2014) or be physically competent enough to complete the FitnessGram test (Hunt et al., 2017). Physical competence is vital for PE teachers because of the lasting effect it has on students' perception and learning (Conlin, 2014; Dean, Adams, & Comeau, 2005; Melville & Maddalozzo, 1988; Thomson, 1996). For example, Conlin (2014) examined middle school students' perception of a healthy role model within PE teachers. Active PE teachers who demonstrate skills and participate in the warm-ups and games were perceived as healthy role models, while the spectator PE teachers were rarely seen as healthy role models. Perceptions of elementary students were also affected by a teacher's physical competence. Elementary students revealed that a credible physical educator "looks like one" in motor skill competencies and physical appearance (Ramos & McCullick, 2015). Subsequently, it is important for PE teachers to be active, skilled, and healthy to be viewed as credible and a healthy role model for lifetime participation in PA. Since PE teachers' physical appearance and fitness are related to their motor skill competencies (Webster et al., 2014), both are mutually necessary to support learning and adherence in PE. It is imperative for PE teachers to be physically competent in motor skills and health to increase teaching effectiveness leading to lifetime participation in PA, while exhibiting adherence to PE content, such as healthy behaviors and health knowledge.

Teaching health knowledge and the meaning of tasks is essential in promoting lifetime participation in PA (Ennis, 2017). Children must understand the connection between their health and practicing movements (Tufan & Macovei, 2015). For example, with 660 eighth-grade students, PA/fitness knowledge significantly predicted PA

participation after school (Chen, Liu, & Schaben, 2017). The effects of health knowledge increase concurrent and future PA participation. DiLorenzo, Stucky-Ropp, Vander Wal, and Gotham (1998) examined social learning and PA data in elementary children across 2 years in two phases. The only predictor of PA was enjoyment during Phase 1; however, exercise knowledge was the only predictor of boys' PA after the 2-year period (DiLorenzo et al., 1998). The findings suggest teaching health and exercise knowledge is supportive of lifetime participation. According to SHAPE America's (2013) national standards for PE, every student should have the knowledge and skills for a lifetime of PA and fitness. Health knowledge includes health, fitness, nutrition, basic anatomy, and movement terms (Buskist, Reilly, Walker, & Bourke, 2016). Once health knowledge is engraved, students will be educated and prepared to excel as physically active adults. Unfortunately, even if students achieve health knowledge and skills, barriers may still prevent lifetime participation in PA.

Barriers in PE toward lifetime participation are inevitable. Barriers are classified as institutional, teacher related, or student related while being different depending on the circumstances (Hills, Dengal, & Lubans, 2015; Jenkinson & Benson, 2010; Mehmeti, 2015a, 2015b; Middlemass et al., 2014; Moore et al., 2010; Sherman, Tran, & Alves, 2010). Institutional barriers include equipment, facilities, overcrowding, time allocation, class size, and low social status in PE. Teacher-related barriers include lack of confidence, ability, interest, qualifications, expertise, attitude, and curriculum content. Barriers that are student related include peer pressure, priorities, past experiences, and home life.

The influence of PE toward lifetime participation in PA may extend beyond class content or the teacher. Predispositions toward sport, outside influences, social background, disabilities, and gender also influence a person's participation in PA for a lifetime (Kirk, 2005). The predispositions can develop into barriers that prevent lifetime participation in PA. Young people can start or stop participating in a sport and PA because of a PE program, but Birchwood, Roberts, and Pollock (2008) argued that predispositions from earlier years ultimately determine lifetime participation. Even though home life and predilections could dictate lifetime participation,

overcoming barriers to the best of a teacher's ability is vital in the lifetime participation model.

The purpose of the lifetime participation model is to increase motivation, decrease competition, increase choice and cooperation, and increase perceived competence to make PE enjoyable for students and to create physically competent teachers who teach health knowledge and can overcome barriers that hinder the integration of the model. The model was derived from self-determination theory, achievement goal thoery, the National Standards for K–12 PE, and barriers that prevent the integration of the theories and standards. The purpose of this study was to educate PE teachers on lifetime participation methodologies and to investigate their perception and implementation of these practices.

Method

Participants

Recruitment began with contacting superintendents within 60 miles of the researcher's university (12 Mississippi school districts). Within the five approved districts, eight principals agreed to take part. Interview times were then scheduled during a nonconflicting time. One participant was lost due to unavailability. The final sample size included eight physical educators (seven men, one woman, M_{age} = 40.3 years, range: 28–53 years) from seven schools in three districts in Mississippi. The PE teachers represented a diverse level of experience (M_{years}= 9.9 years, range: 2–20 years) and elementary (n = 3), middle (n = 2), and high (n = 3) schools.

Materials and Procedures

Following institutional review board approval, the researcher contacted PE teachers within approved schools and invited them to participate in the study. Upon the teachers' acceptance to participate and returning informed consents, the researcher met participants individually at their school. Interviews took place in a quiet space selected by the participant such as an office, empty gym, or a field house. Before the interview was initiated, the researcher explained

the purpose of the study was to investigate what lifetime participation methodologies are being used in PE classes today. The researcher gave a brief disclosure of personal information, including PE teaching experience and the study being a part of a master's degree requirement. Participants were given a written copy and discussed the lifetime participation model. The discussion about the lifetime participation model included the topics of increasing motivation, decreasing competition, increasing choice and cooperation, increasing perceived competence, making PE enjoyable, being a physically competent teacher, teaching health knowledge, and overcoming barriers. An audio-recorded interview followed the initial discussion with the researcher asking selected interview questions (Table 2) and participants disclosing their thoughts and use of the lifetime participation model. Interview questions were designed to assess PE teachers' perception and implementation of the lifetime participation model. Interview questions were based on a survey created by Benes, Finn, Sullivan, and Yan (2016). Benes et al. created the Movement Survey to examine teachers' perceptions and integration of movement in the classroom. The researcher modified the Movement Survey by replacing "movement in the classroom" with "lifetime participation model" to meet the purpose of the study.

The researcher designed the interviews to be semistructured to maintain consistency throughout the interviews while allowing for a more natural conversation. For example, all interviews started with the same question: Do you use aspects of the lifetime participation model in your classroom? Following questions were based on the participants' response. Not all of the questions were asked to each participant, because some volunteered similar information in a prior response. Likewise, participants may have been asked supplementary questions. Participants were also asked to give examples and to elaborate on the methodologies used in class so the researcher could gain a deeper understanding. However, all participants answered the open-ended questions regarding their use of the lifetime participation model, their understanding of the connection between the model and lifetime participation in PA, and the role of PE in increasing lifetime participation in PA.

Table 2
Questions From the Interviews

1.	Do you use aspects of the lifetime participation model in your classroom?
2.	Do you think that teachers should integrate the lifetime participation model into the classroom? Why or why not?
3.	What practices does your school currently use to get children active during the school day?
4.	What is your understanding of the connections between lifetime activities and adult health?
5.	What do you think are the benefits of using the lifetime participation model in the classroom?
6.	Do you believe that lack of lifetime activities and physical activity in schools is a problem? Why or why not?
7.	What do you think are the barriers and/or challenges of using the lifetime participation model in the classroom?
8.	Do you think that schools should have a role in increasing students' physical activity levels outside of physical education and recess? Why or why not?

Data Analyses

Transcriptions of the interviews were completed and each was examined in a three-part process for themes among the participants. The meaning of vocation and isolation of themes in the interview questions was determined through an approach by van Manen (1990). Van Manen created three-step method to uncover themes within text of lived experiences. The first step was to analyze the text as a whole and capture a phrase that summarizes the main significance. The second step was to select or highlight the phrases that seem to be essential or reveal a particular experience or idea. The final step was a line-by-line evaluation of every sentence to determine what it means or what the sentence reveals about the experience. This three-step method enabled the emergence of themes within the interviews as well as an accumulative premise. In this process, the researcher first read interview transcriptions and circled a phrase that summarized the interview. The researcher then focused on each interview question and highlighted a key phrase from each response.

Last, the researcher read each line to determine what participants revealed about their experiences or perceptions on implementing lifetime participation methods in PE. For organizational purposes, the researcher used colored highlighters to signify emerging themes. For example, pink highlights were areas of implementation and a positive perception of the model, green highlights were barriers preventing implementation of the model, purple highlights were nonintegration or negative perceptions of the model, and yellow highlights were complaints or negative perceptions about other teachers/coaches.

The researcher established data trustworthiness by eliminating bias and aspects that could possibly influence the data, such as knowledge of the profession and participants. The teaching experience of the principal investigator contributed to initial perceptions; however, participant identifiers were eliminated in data analysis and in a peer debriefing following the interviews to limit these biases and allow for a fair data analysis.

Findings

Three major themes were pulled from the interviews including (a) approval and level of integration of the lifetime participation model in PA, (b) disapproval toward the coach mentality, and (c) barriers preventing integration of the lifetime participation model.

Integration and Approval

Each teacher discussed implementing aspects of the lifetime participation model in PE. Half of the participants claimed to make PE enjoyable for the students. This was portrayed by participants saying, "We try to increase motivation and try to make it more enjoyable, because obviously if the kids are not enjoying themselves, they're not going to want to do anything," "Definitely, we make it enjoyable," "We try to make it enjoyable and also [give] the kids a choice," and "What is important is to get them up and let the kids have fun."

Various other areas of integration of the lifetime participation model were revealed by participants, but less frequently. Only one participant incorporated activities students can do for a lifetime, including "activities that they will play later on like at the beach." Only one participant said health knowledge was integrated into the PE curriculum; the students "come in and sit on the floor and I'll tell

everyone they have to tell me one thing that's healthy for you and then we'll go outside and play." Two participants decrease competition in PE by doing "different games that offer them more aspects than just competition" and "they have their personal goals . . . and it's not a competition thing." Likewise, two participants claimed to be physically competent, mentioning, "I am physically competent myself, I still workout, play with the kids, and participate in some of the games" and "I'm physically confident as a teacher and I can get out and demonstrate any of the activities."

Practically all of the participants confirmed their belief that integration of the lifetime participation model would benefit lifetime participation in PA of their student population. Participants stated a general favorability toward the model with some understanding of the connection to adult participation. Examples of participants perceiving the lifetime participation model include "Yes, because if you can do all of these things and get these students active and involved in PE, then as they grow older, because they enjoyed it so much, then they will want to continue," "Yes, I think each one of these [lifetime participation methodologies] would be helpful," "Yes, I do, I really do, I mean this is a simplified model and it's really well rounded," "Absolutely yes, I mean just looking at this model for the first time I would say yeah," "Definitely, whenever you reach a kid and they're enjoying doing something in the class, they are going to want to do it longer than 45 minutes," and "Doing this kind of stuff is important if you want to have people who are active for a lifetime." These quotes confirm a positive perception of the model leading to lifetime participation in PA.

While many perceived the lifetime participation model to be linked to lifetime participation, one participant felt the opposite: "Yeah, it would be great if a lot of people apply that when they got older, but I don't know if a lot of people do." This quote shows hopefulness toward the model yet an understanding of today's society. As far as nonintegration, it was only evident within the interviews from one participant, who claimed, "As far as choice, I would say we do not do much of that; pretty much what we say is what we do . . . we have more of a competition-oriented class." Following this response, the researcher asked the participant about students feeling discouraged to participate in PE from losing and the participant responded,

"Yeah, I could see where that connection could be, but, I mean, I'm a coach . . . like if you got your brains beat in every game that you play, yeah, I wouldn't want to do that later in life either." It was fascinating that the one participant who gave examples of nonintegration also highlighted the coaching role.

Disapproval of the Coach Mentality

The majority of participants mentioned that other teachers/coaches were not fulfilling their PE duties. Several quotes by the participants illustrate this finding: "Here in Mississippi the old attitude is just roll the ball out and the coach sits on his backside and the kids just do whatever," "The boys play if the coach rolls the ball out there, and a lot of times it's a coach of a sport and, you know, during class he's probably planning his practice game plan for the next games," "You'll find teachers being specialist in the sports they coach, so when they have a regular PE class, they are trying to recruit kids to play their sport during class," "I don't think they integrate this model . . . A lot of the PE teaching jobs in the high school are tied with coaching jobs," and "in high school, teachers see it like: I have them for one hour and what is easiest." These quotes confirm PE teachers feel other teachers/coaches do not integrate the lifetime participation model or may not be accomplishing basic teaching duties.

Barriers Preventing Integration

The participants revealed overcrowding and/or funding being the main barriers that prevented or hindered their use of the lifetime participation model in PA. Overcrowding in the gym was a popular barrier mentioned by participants. Participants claimed, "Overcrowding is the big thing and a lot of times the focus is not on PE, you know, they might throw 60 students in there with two teachers and you know that's hard," "If I had 15 kids, I'm not going to just say let's go play basketball or just go do this. We're going to do organized and structured lessons and we're going to use this formula. Some days we have competition, some days were going to do different things, but, you know, it's hard to do that when you have 40," "If one person is in there with 75 kids, you cannot expect them to have a structured functioning lesson," and "We have to share the gym with seventh- and eighth-grade sports and drivers ed . . . and our basketball team has to practice in here also, so we have to share

a lot of space." These quotes suggest there are too many students in the gym for teachers to integrate the lifetime participation model in PA. Overcrowding creates challenges in getting students motivated, moving, and organized. The simple solution to the overcrowding barriers would be to hire another PE teacher, but unfortunately the funds within the school or county are not always prominent. One participant said, "It has a lot to do with funding too, because you're not necessarily going to have the money to say let's go hire another PE teacher, sometimes they say we need to have another math teacher."

The lack of funds was the most common barrier mentioned during the interviews. Over half of the participants assumed other schools had an equipment barrier but their school had sufficient resources. For instance, participants stated, "I am sure there are a lot of places that it is tough to get equipment, but we are pretty fortunate here," "Some places do have limited resources, now we're blessed here because, back in 2007, we got a $75,000 grant," "A lot of schools just don't have the funds to make sure all of the equipment is up to date," and "At the high school, I don't know if they have a lot of PE equipment." These quotes illustrate a perception of other programs not having adequate funds to integrate the lifetime participation model.

Others mentioned the growth in their PE program over the years with the little money that has been provided. One participant mentioned, "I used to have nothing, and now I have a bunch; so I know that is probably where you're going to come into some problems with the high school and how they choose to spend their money, and that makes a huge difference on the program." This quote demonstrates that teachers have a choice on how to spend the resources provided for PE, and this affects the quality of the program. The only participant who claimed to have minimal equipment also exposed the lack of appropriate spending, expressing, "We don't have much and I'm not given any money per se, other than, like, a teacher credit card, which is teacher enhancement fund." This quote suggests the funding may not necessarily go directly toward the purchase of PE equipment and depicts little interest from the teacher to overcome the equipment barrier.

A few participants discussed behaviors to overcome the barriers preventing integration of the lifetime participation model during

the interviews. PE teachers thought it was possible to integrate the lifetime participation model only

> if you have staff that is willing to try hard and implement a model like this, and implement other things like that, then yeah, it works really well. But in some places they don't, in some places they are just trying to get through the day and let the kids do this or that.

Others agreed and claimed, "It's going to take someone that wants to do that, somebody who really cares" and "It just depends on if they want to be lazy and take the easy way, or you are going to have those that like to work a little harder." These quotes confirm PE teachers can overcome the barriers hindering integration of the lifetime participation model. Participants in the study believed integration of the model is possible under the circumstance of a PE teacher who is willing to overcome barriers and to work a little harder.

Discussion

This study examined teachers' perceptions about implementing the lifetime participation model to gain a better understanding of the extent of use of lifetime participation methodologies in PE. In conjunction with using lifetime participation methodologies, teachers in the study reported an understanding of the connection between integrating the model and lifetime participation. Teachers believed that lifetime participation methodologies should be implemented in PE to improve children's health. However, it was revealed that teachers/coaches portrayed a disapproval and nonintegration of the model. Participants reported barriers that were either overpowering or still hindered integration of the lifetime participation model, such as overcrowding and limited funds. While there was a moderate level of integration of lifetime participation methodologies, further implementation is contingent upon teachers' willingness to overcome the barriers and to focus their attention on strategies that lead to lifetime participation. The findings reveal a few teachers integrate aspects of achievement goal theory with student motivation, less competition, giving students a choice, and allowing cooperation activities. Many teachers also strive to make PE enjoyable, an aspect of self-determination theory. However, no teachers mentioned increasing

students' perceived competence, which is vital in self-determination theory. The components of the National Standards for K–12 PE of being physically competent and teaching health knowledge were moderately integrated.

The research reveals that teachers who want to overcome the barriers that inhibit integration will. The equipment barrier could be overcome with the proper inclination. Participants explained ways they conquered this barrier with grants, teacher funds, and donations of free equipment. To receive a grant or donations, teachers must go above their teaching duties to write the grant and ask for donations. Otherwise, teachers will continually face an equipment barrier and grumble about lack of equipment while not doing much to overcome this barrier.

Coaching duties suppressed the implementation of lifetime participation methodologies in PE. This was not surprising, since literature has suggested that teachers' behaviors coincide with lifetime participation methodologies with heightened classroom management, while coaches' behaviors lean away from these methodologies with an overemphasis on skillfulness and competition (Rupert & Bucshner, 1989). While narrowing the focus on skills and competition is essential in athletics, it is not in PE. Coaches are highly important figures and well regarded, but coaching duties may overrule and eliminate lifetime participation methodologies in PE. Several participants disclosed their concern of coaches during the interviews by illustrating coaches to "roll out the ball" or "sit on their backside" during PE. These behaviors support skill acquisition and affective behaviors that lead to lifetime participation in all students. The perceived coaching mentality was to emphasize the athletic team, not the enhancement or integration of the lifetime participation model. The coach is not seen as anti-lifelong participation, but as paying attention strictly to the coached sport, not to the average students. Students who do not fit the part or are not selected to play on the team miss their opportunity for PA and PE. This leads to unencouraged students who are sedentary while not learning about health or motor skills in PE.

It seems common that when fulfilling the dual role of coaching and teaching, the educator prioritizes one over the other. Jefferies (2005), a past president of SHAPE America, had an understanding

in the matter: "Successful teaching is less noticed, judged, or rewarded than successful coaching, it's understandable that many teacher coaches chose to focus most of their energy on athletics" (p. 41). This research also confirmed teachers who fulfill the dual role prioritize coaching over teaching. The teachers showed a lack of concern toward lifetime participation and health status of general PE students. It is believed that PE teachers have a prime role in advocating lifetime participation in students. Teachers could directly influence children to become physically active for a lifetime upon understanding and implementing all of the aspects of the lifetime participation model.

This study had several limitations. The sample of participants was predominantly men with an unbalanced gender ratio of 8:1, which could have influenced the results. The unbalanced gender ratio was not representative of the gender balance of PE teachers across the United States. However, there are more male than female PE teachers in the United States (National Center for Education Statistics, 2015). Also, participants only represented three school districts in Mississippi; therefore, the generalizability is limited to PE teachers from Mississippi. Because participation depended on permission from superintendents and principals, this may have affected the results as compared to random sampling of PE teachers in the United States. The results depended on self-report, which could have misrepresented the methodologies being implemented in the participants' class. Researchers in future studies could observe teaching episodes of, along with taking field notes describing aspects of, the lifetime participation model being implemented. It is recommended that future reports examine a larger sample size from various states wth an equal gender balance for a more adequate representation of the implementation of lifetime participation methodologies in PE.

Subsequently, this study gained an in-depth description of the perceptions and implementation of lifetime participation methodologies in PE teachers in Mississippi. There is a need for more understanding between integrating lifetime participation methodologies and lifetime participation. Ennis (2017) proclaimed the need to test the effectiveness of PE programs that purposefully implement lifetime participation methodologies. Therefore, future studies should include a larger sample size with observations and a follow-up to examine the effectiveness of lifetime participation

methodologies. Physical educators have the responsibility to leave a healthy mind-set stamp on students' lives, be a positive and motivating role model, construct the ideal curriculum, and overcome barriers. Since barriers could overrule lifetime participation methodologies, there could be less transfer from PE to adult life. Administration and PE teachers should be provided with the knowledge, resources, and training necessary to implement in PE lifetime participation methodologies that motivate and support students to be physically active for a lifetime.

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PEDAGOGY

Upper Elementary School Students' Attitudes Toward Physical Education in Skill-Themes and Multiactivity Approaches

Michael Gosset and Stephen Silverman

Abstract

The purpose of this study was to investigate the influence of the physical education curricular approach used in teaching upper elementary school students on students' attitude toward physical education. An Approach Guide was developed to assist in categorizing school approaches as skill-themes (ST) or multiactivity (MA). Twenty schools meeting designated participation criteria were selected. An attitude instrument (Phillips & Silverman, 2012) was administered to fourth- or fifth-grade students (N = 313) in physical education classes in schools, 10 schools in each approach category. Multivariate analyses of variance were performed with the class as the unit of analysis for attitude sub-factor variables and attitude main factors, each using approach as the independent variable. A t-test was completed for overall attitude between the two approaches. Means and standard deviations were calculated for the sub-factors, main factors, and total attitude by curriculum, school, grade, gender, and approach. Analyses suggest that fourth- and fifth-grade students enjoy physical education and think it is important. No significant differences were found between grades, genders, or approaches. The range of attitude scores within the schools was wider in the MA approach than in the ST approach and may be a result of teacher influence. Larger standard deviations within schools

Michael Gosset is a lecturer and coordinator in the Physical Education Unit, Education Department, Hostos Community College. Stephen Silverman is a professor and dean, College of Education, Florida Atlantic University. Please send author correspondence to gosset2@aol.com

using the MA approach may also indicate more varied attitudes toward physical education than in schools using the ST approach.

Many of today's young people are inactive, not fit, and overweight. Overweight and obesity are global issues. In the United States, obesity is of considerable clinical and public health as well as financial (Krebs, 2003) concern. America's obesity rate is triple the rate from one generation ago (U.S. Department of Health and Human Services, 1996). In 1996, obesity affected nearly 20% of all children and adolescents in the United States. Inactivity contributes to obesity and threatens to reverse the progress in reducing deaths from cardiovascular diseases (Centers for Disease Control and Prevention, 2008). Physical activity should be encouraged among children, as it is assumed this behavior will carry into adulthood.

Children who are overweight and obese can have a negative view of their participation in physical activity and may choose a more sedentary lifestyle (Digelidis, Kamtsios, & Theorakis, 2007). One way to combat obesity is to increase physical activity levels in school-based physical education (McCullick et al., 2012; McKenzie et al., 2003). It has been suggested that if a student has a positive experience in physical education and develops a positive attitude toward physical activity, the student is more likely to participate in physical activity outside of school (Solmon & Lee, 1996). Conversely, students showing unfavorable attitudes toward physical education may hesitate to participate in physical activity outside of school (Carlson, 1995; Ennis, 1999; Portman, 1995). The attitude that elementary school children develop toward physical education, therefore, is a crucial ingredient in the fight against the obesity epidemic in America.

Attitudes are a key part of everyday life, influencing people in many ways and in many areas of their lives. Allport (1968) considered attitude distinguishable and essential as a concept, while Ajzen (2005) described it as a disposition to react positively or negatively to a person, object, institution, or event. These attitudes toward objects are determined by a person's belief systems (Silverman & Subramaniam, 1999), and though people tend to hold many beliefs about an attitude object, only a small number of beliefs can be attended to at any given time (Ajzen, 2005). These salient beliefs form a person's attitude (Ajzen & Fishbein, 1980). Should the salient beliefs about the attitude object be positive, a positive attitude will

result toward the object. If not, a negative attitude will result toward the object

It is somewhat difficult to change attitude (Eagly & Chaiken, 1993), yet it is possible. Since beliefs can be changed over time (Ajzen & Fishbein, 1980), a situation once perceived by a person to be negative can be changed should positive experiences take place (Zimbardo & Leippe, 1991). Conversely, a negative experience in a situation formerly perceived as positive might create an attitude change. Attitude changes can occur when the reasons for the individual's unfavorable attitude toward the attitude object are discovered and required modifications made (Silverman & Subramaniam, 1999). Attitude characteristics can be used to explain attitude theories.

The attitude theories that guided this study were the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (TPB; Ajzen, 1991). Both theories posit that attitudes and traits are implied by human behavior, but that their influence can be ascertained through study of "broad, aggregated, valid samples of behavior" (Ajzen, 1991, p. 181). Both theories also assume that people usually behave in a reasonable manner (Ajzen, 2005).

The TRA states a person's attitude guides the person's behavior (Fishbein & Ajzen, 1975), and includes the individual's attitude toward the behavior, or beliefs about likely consequences, and their beliefs about the expectations of others, called subjective norms. The person's behavioral intention is influenced by their attitude toward an object and their subjective norm to the behavior. The TPB extends the TRA to include beliefs about possible barriers to performing behaviors, or perceived behavioral control, an individual's perceived ease or difficulty in performing the behavior. The perceived ease or difficulty contributes to forming the person's behavioral intention. People have to believe that they have the "means and opportunities" to do so (Ajzen, 2005, p. 118).

Students' attitudes play an influential role in physical education (Solmon, 2003), and as such, student attitude toward physical education has been the subject of a number of studies through the years (Carlson, 1995; McKenzie, Alcaraz, & Sallis, 1994; Phillips & Silverman, 2015; Silverman, 2017; Subramaniam & Silverman, 2007). The findings from these studies suggest that the majority of

students enjoy physical education and feel it is important (Carlson, 1995; Phillips & Silverman, 2015). A viable goal would certainly be for students to find physical activities they enjoy and learn through school. Though the majority of children may enjoy physical education, still many student do not. These students may be in physical education class because they have to be, not because they want to be (Graham, 2001). Finding out why some children do not enjoy physical education will assist physical educators in modifying practices to ensure maximum participation and enjoyment.

Several variables affect student attitude toward physical education. These student entry characteristics include grade, gender, and skill level (Silverman & Subramaniam, 1999). Because good data on attitude are difficult to get for students younger than fourth grade, it has been suggested that the steady decrease in attitude toward physical education begins in fourth grade (Phillips & Silverman, 2015). Beginning with fourth and fifth grades, research has suggested an overall positive student attitude toward physical education, with fourth graders showing significantly higher attitudes than fifth graders (Phillips & Silverman, 2015).

There is a difference in attitude between girls' and boys' feelings about physical education. Research has suggested that girls have a more positive attitude toward physical education than boys do at the primary level (Birtwistle & Brodie, 1991) and derive more enjoyment from aesthetic and social activities (Smoll & Schultz, 1980), while boys have more positive attitudes toward activities involving strength (Williams, 1988), risk, and challenge (Folsom-Meek, 1992). This trend tends to reverse, however, and boys tend to show an overall higher positive attitude beginning around puberty (Wersh, Trew, & Turner, 1992).

Not participating in physical activities may stem from a lack of skill (Ennis, 1996). Student skill level influences student attitude toward physical education. Low-skilled students experience physical education differently from higher-skilled students (Graham, Holt-Hale, McEwen, & Parker, 1980; Rikard & Banville, 2006; Silverman, 1993; Solmon & Lee, 1996; Subramaniam, 2010). Research has suggested that low-skilled students have a more negative attitude toward physical education than higher-skilled student do, resulting in avoidance types of behavior (Carlson, 1995; Portman, 1995). With

successful participation, low-skilled students may see their perceptions, and hence attitudes, improve (Carlson, 1995; Portman, 1995). If educators were to use appropriate practices in physical education classes, perhaps the success rates of low-skilled students would improve and hence improve attitudes.

Student attitude is not only affected by student entry characteristics but also by contextual factors. One contextual factor that has been shown to influence student attitude toward physical education is curriculum (Subramaniam & Silverman, 2002). There are many approaches for physical education curricula and many ways to teach within those approaches. The curricular approach used may have an effect on children's attitude toward physical education. Approaches may use competition in various forms.

The use of competition in physical education programs is pervasive in the United States (Bernstein, Phillips, & Silverman, 2011). Curricular approaches emphasizing competition promote both positive and negative outcomes. They might be used to promote physical activity, develop skill, sportsmanship, and prepare students for a competitive world or might exclude students from enjoyment and success, as well as from interest in participating in a presented activity (Bernstein et al., 2011; Ntoumanis, 2001).

One approach that uses competition as an integral part is the multiactivity (MA) model. The MA model is typified by short units of activity. The typical unit might be 2 to 3 weeks. Many of the same skills or sports are taught yearly. The intent of the MA model is to expose students to a variety of sports (Himberg, Hutchinson, & Roussell, 2003). Another commonly used model in elementary physical education is the skill-themes (ST) approach. In physical education, returning frequently during the school year to teach a movement skill or concept provides children with variations of a skill theme. The context of the return to the teaching of a particular skill may vary from the same context, to slightly different, to very different. It is the development of skills in a variety of situations that leads to competency and diversity. Many factors can be manipulated within the theme. Skills or movements are often combined within the ST approach, which increases the challenges of a task. This progression often gives way to a new skill. When progressions are used appropriately, from simple to complex, teachers assist children in

becoming skillful movers. Scaffolding, or linking a series of lessons in a skill theme, takes place (Graham, 2001).

The purpose of this study, therefore, was to investigate the influence of the physical education approach used in teaching upper elementary school students on students' attitude toward physical education, including by grade and gender. We know much about secondary students' attitudes toward physical education (Bernstein et al., 2011; Carlson, 1995; Ennis, 1996; Montalvo & Silverman, 2008; Subramaniam & Silverman, 2007), but our knowledge of elementary students' attitudes toward the same is limited.

Method

This study used a multistep process. These steps were (a) develop a guide to categorize a school's physical education curricular approach; (b) participants (seek out, entry into, and verification of schools using the ST or MA approaches); (c) instrumentation; (d) questionnaire administration; and (e) data analysis.

Categorizing the Physical Education Curricular Approach

To verify that a school used a particular physical education curricular approach (i.e., ST or MA), a guide assisted the lead researcher in assessing curricular approach components and designating the degree to which the approach was implemented. A Curricular Approach Guide (CAG) was created. This CAG went through several phases, drafts, and piloting.

The purpose of Phase 1 was to produce a document containing elements appropriate to good teaching. Based on input from physical education pedagogy professors, this list included elements and characteristics that should exist in any quality physical education program. The type of curricular approach was not considered at this time.

Phase 2 separated the elements into two lists, one relevant to ST and another relevant to any "other" program. Guidance in the modification of the ST list was received from a university professor and author/expert in ST. This produced a smaller set of observable characteristics, fine-tuning the categories. During this phase, various types of rubrics and methods to quantify observations were developed, including a checklist, a holistic rubric, a percentage-of-lesson scale, and a Likert-type scale. The use of the Likert-type scale from

1 (*low-characteristic never present*) to 5 (*high-characteristic always present*) was chosen, with placement within the scale based on lesson observation, teacher interview, and documentation. A 4 for a characteristic would indicate that most of the time during the lesson, or within the yearly plan, the characteristic was observed/documented. A minimum of a 4 would need to be selected for each characteristic for the program to be considered using an ST approach.

During Phase 3, piloting began with the CAG. Four physical education teachers were contacted, and their fourth- or fifth-grade classes were observed, with an interview following the observation. The CAG was able to assist in the determination of an ST approach, but it was not clear how other approaches could be determined. During this phase, it was felt that dichotomizing ST or MA was more appropriate, as opposed to ST or "other."

To dichotomize an ST curricular approach from an MA approach, Phase 4 included placing characteristics of an MA approach on paper with the same Likert-type scale. This provided a document with characteristics of both approaches. After discussions with a National Board–certified physical education teacher who had a doctorate in physical education and substantial experience in elementary schools, there were still characteristics more consistent with good teaching/pedagogy than with a particular approach. Such items were deleted. Accompanied by a university professor experienced in elementary physical education as an additional observer, this version of the CAG was piloted. It was found that the CAG now clearly assisted in categorizing an MA approach.

To further assist with the ST approach categorization process, the researchers created additional teacher interview prompts. Prompts pertained to the focus (theme or context) of the observed lesson and the foci of the lessons preceding and subsequent to it. Additional prompts referred to teacher use of instructional strategies and any use of competitive activities. For example, teacher responses such as "we do about 8 or 9 lessons of (a given sport) in the unit with the games at the end of the unit" would be indicative of an MA curricular approach, while "we did throwing and catching, or sending and receiving, with round objects today, and we did throwing and catching with footballs a couple of weeks ago" would indicate an ST curricular approach. Another example indicating an ST approach

would be "we'll do badminton, volleyball, and pillow polo in a theme of striking with elements."

In Phase 5, with the modifications in place, the researchers piloted the CAG in a different school to look for teacher responses indicative of an ST approach. According to the teacher and his lesson plan book, the most recently worked on skill was throwing. Using the interview prompts, the researchers asked the teacher when he most recently worked on throwing, prior to the date indicated in the plan book. The teacher responded, "We worked on throwing a few classes ago, and also three weeks ago, using different types of balls each time." When asked about instructional strategies, the teacher responded with "guided discovery and problem solving." These responses are compatible with an ST curricular approach.

The CAG continued to be piloted in an additional school with an expert in skill themes and adjunct professor and the lead researcher as observers. Based on observation and the teacher interview, agreement was reached that the lesson and curricular approach would be categorized as ST. A discussion occurred, however, over two characteristics on the ST list, the use of scaffolding and progression. Since it was agreed that perhaps these could be used in programs other than ST, these items were eliminated and a new version of the CAG created.

Piloting concluded with the final version of the CAG in another school. With observation and documentation, an MA curricular approach was agreed upon. The consistent agreement between the experts in elementary physical education and in the ST approach and the lead researcher indicated the ability of the CAG to assist in accurate categorization of a curricular approach as ST or MA.

Participants

A purposive sample of public and private (or independent) schools within the northeastern United States was used for this study. Specifically, schools that had been recommended by administrators, state professional organizations, and university professors because of their reputations for using one of the physical education curricular approaches under investigation were selected. In addition, physical educators whose curricular approaches were familiar to one researcher were recruited for participation. The participants

under investigation were fourth- and fifth-grade students ($N = 313$) at these schools, who ranged in age from 9 to 11 years old. There were 171 females and 142 males. Roughly half of the students were Caucasian, with Latinos, African Americans, and other minority students composing the other half. Physical education at the schools was taught by a certified physical education teacher, the only physical educator to teach the classes being studied. The teachers needed at least 4 years of experience at the elementary level for inclusion in the study. Pedagogical skills are gained slowly and through experience (MacPhail & Hartley, 2016). Longevity of 4 years is likely to include tenure, the passing of occupational socialization, and an established curriculum, including the ability to discern between curricular topics. Ten classes were included for each approach (i.e., ST and MA), with class sizes ranging from 10 to 40 students. The socioeconomic status of the schools was diverse.

Institutional review board approval was granted by the researchers' institution. After agreeing to be observed and interviewed, the contacted teachers were observed teaching a class on two occasions, along with postobservation interviews. Teachers were asked to provide the researchers with documents such as a lesson or unit plan or a curricular map. This allowed the researchers to gain a realistic picture of the program. Questions for teachers following the observations were taken from prompts. Classes were observed via the CAG to assist in categorization of the program as using an ST or MA curricular approach or neither.

At the schools that were categorized as using an ST or MA approach, the teachers were asked if they would be willing to participate in the study. If so, their permission was attained in writing. In addition, their principal was asked for approval in writing for the school to participate in the study. If the school could not be categorized as using an ST or MA approach, the teachers were thanked for their time.

A return to the research site was made to schools whose programs were categorized as using the ST or MA approach. The purpose of the study was explained to the classes, and physical education teachers were provided with written consent forms for students and parents/guardians with participant's rights and with an assent form for minors for their parent or guardian to read, sign, and return.

Upon completion of the teachers' receipt of signed consent and assent forms, a visit was made to each school to implement the attitude instrument.

Instrumentation

The attitude instrument adapted for and whose scores were validated for upper elementary school students by Phillips and Silverman (2012) was used in this study. This instrument, based on the TRA and TPB, measures fourth- and fifth-grade children's attitude toward physical education. It is a 16-item questionnaire with items ranked on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The questionnaire is divided into factors of curriculum and teacher, with sub-factors of cognitive-curriculum (CC), cognitive-teacher (CT), affect-curriculum (AC), and affect-teacher (AT). There are four questions for each of the four sub-factors. Eight questions are negatively worded. Examples of questions include "the activities I learn in my physical education class are important to me" (CC), "my physical education teacher makes class important to me" (CT), "the activities I do in my physical education class get me excited about coming to class " (AC), and "my physical education teacher makes learning in my physical education class unpleasant for me" (AT).

Data Collection

Instructions for taking the attitude instrument (i.e., questionnaire) were given to the students prior to distribution of the instrument. Any student questions were answered. A demographics information sheet asking for their grade and gender, numbered for identification, was attached to the questionnaire. This was submitted with the completed questionnaire. Any student choosing not to participate in the study had an activity provided for them by the physical education teacher. Students were reminded of the purpose of the study and instructed how to take the questionnaire. They were also reminded that it was an anonymous questionnaire, that their teachers would not know who completed a questionnaire nor what any answers were, and were asked to be as honest as possible with

their responses. Students placed their completed questionnaires and demographics sheets into a folder facedown to remind them of the anonymity. The students also were told that they were free to stop taking the questionnaire at any time.

Data Analysis

The four sub-factors (i.e., cognitive-curriculum, cognition-teacher, affect-curriculum, affect-teacher), total enjoyment, total cognition, and total attitude were the dependent variables in the analysis. Data were entered into Microsoft Excel, uploaded into SPSS, and reverse-coded. Descriptive statistics were determined for the sample and by school, curricular approach, gender, and grade for each dependent variable. Due to the interdependency within each class, the unit of analysis for all difference testing was the class (Silverman & Solmon, 1998). Multivariate analysis of variance (MANOVA) was performed, with the curriculum as the independent variable and the four attitude sub-factors as dependent variables. A second MANOVA was conducted with the total enjoyment and total cognition as dependent variables. Finally, a *t*-test was conducted for total attitude between the two curriculum approaches.

Results

The results for the study were examined by curricular approach, gender, school, and grade for overall attitude, cognition, and affect, and examined for each of the four sub-factors. All results are related but supply different levels of detail. These findings provide an analysis of upper elementary school student attitudes.

Students in both curricular approaches (i.e., ST and MA) combined had an overall positive attitude toward physical education. Descriptive statistics showed a mean for all students of 68.41 (SD = 10.83) out of a possible score of 80. Table 1 displays means for the four sub-factors and main factors for all students, with the sub-factor scores ranging from a low of 16.75 (SD = 3.28) for CT to a high of 17.41 (3.26) for AT. Among the main factors, the affective mean (34.74, SD = 5.48) was higher than the cognitive mean (33.67, SD = 6.08).

Table 1
Means: All Students, Attitude Sub-Factors, and Main Factors

Factor	*M*	*SD*	*N*
CC	16.92	3.25	313
CT	16.75	3.28	313
AC	17.33	2.87	313
AT	17.41	3.26	313
Cognitive Sum	33.67	6.08	313
Affective Sum	34.74	5.48	313
Total attitude	68.41	10.83	313

Note. CC = cognitive-curriculum; CT = cognitive-teacher; AC = affect-curriculum; AT= affect teacher.

Overall means at the different schools ranged from 59.63 (*SD* = 12.76) at School 13 (MA school) to 76.30 (*SD* = 3.34) at School 18 (MA school; Table 2). Overall means by gender in schools ranged from a low of 57.87 (*SD* = 14.5) at School 13 (MA school) to a high of 76.13 (*SD* = 3.4) at School 18 (MA school) for females and from 60.5 (*SD* = 21.21) at School 1 (MA school) to 77.50 (*SD* = 3.00) at School 9 (ST school) for males. Within the curricular approaches, the ST schools' means ranged from 62.13 (*SD* = 10.86; School 5) to 72.58 (*SD* = 7.54; School 7). The MA schools showed a wider range from 59.62 (*SD* = 12.76; School 13) to 76.3 (*SD* = 3.34; School 18).

Among the main factors, cognition ranged from 28.51 (*SD* = 6.58) at School 13 (MA school) to 38.2 (*SD* = 1.75) at School 18 (MA). The affect scores ranged from 31.00 (*SD* = 5.77) at School 6 (ST) to 38.10 (*SD* = 1.72) at School 18 (MA). Among the sub-factors, CC scores ranged from 14.37 (*SD* = 3.38) at School 13 (MA) to 19.00 (*SD* = 0.94) at School 18 (MA), with CT scores ranging from 14.14 (*SD* = 3.89) at School 13 (MA) to 19.2 (*SD* = 1.47) at School 18 (MA). The AC scores ranged from 15.37 (*SD* = 3.05) at School 6 (ST) to 18.9 (*SD* = 0.73) at School 18 (MA), and the AT scores from 15.14 (*SD* = 4.65) at School 13 (MA) to 19.2 (*SD* = 1.31) at School 18 (MA).

Table 2

Means: Total Attitude by Curricular Approach, School, Grade, and Gender

		Skill-themes schools (Grade level)										
Gender		**1 (4)**	**2 (4)**	**3 (4)**	**4 (4)**	**5 (4)**	**6 (5)**	**7 (4)**	**8 (4)**	**9 (4)**	**10 (4)**	**Total**
Female	*M*	71.90	67.00	63.33	71.00	70.64	62.88	68.78	71.00	59.86	75.29	68.16
	SD	3.84	7.57	9.33	11.06	7.41	13.18	9.23	6.33	22.03	4.86	4.82
	N	10	12	6	6	11	8	9	15	7	7	91
Male	*M*	68.67	61.46	74.25	66.70	64.14	61.38	74.87	71.00	77.50	69.57	68.94
	SD	11.30	9.70	5.32	14.76	12.08	8.80	5.46	7.91	3.00	10.37	5.6
	N	12	13	4	5	7	8	15	9	4	7	84
Total	*M*	70.14	64.12	67.70	69.00	68.11	62.13	72.58	71.00	66.27	72.43	68.55
	SD	8.72	9.03	9.46	12.39	9.71	10.86	7.54	6.97	19.31	8.33	5.10
	N	22	25	10	11	18	16	24	24	11	14	177
		Multiactivity schools (Grade level)										
Gender		**11 (4)**	**12 (4)**	**13 (4)**	**14 (5)**	**15 (4)**	**16 (5)**	**17 (5)**	**18 (5)**	**19 (4)**	**20 (4)**	**Total**
Female	*M*	75.50	59.60	57.88	75.63	71.17	67.56	71.67	76.13	71.78	68.78	69.57
	SD	4.51	22.81	14.50	4.96	11.36	9.18	9.63	3.40	5.07	9.71	6.39
	N	4	5	16	8	6	9	6	8	9	9	80
Male	*M*	60.50	76.00	62.18	71.77	72.25	64.25	64.91	77.00	74.75		69.29
	SD	21.21	3.54	9.81	8.77	4.57	13.52	9.51	4.24	2.06		6.34
	N	4	5	11	13	4	4	11	2	4		58
Total	*M*	68.00	67.80	59.63	73.24	71.60	66.54	67.29	76.30	72.69	68.78	69.44
	SD	16.30	17.65	12.76	7.64	8.88	10.22	9.83	3.34	4.50	9.71	6.19
	N	8	10	27	21	10	13	17	10	13	9	148

Table 3 contains means by approach and by gender, broken down for the four sub-factors, main factors, and total attitude. Among the main factors, the highest and lowest cognition factor scores were 34.24 (SD = 2.94) and 33.45 (SD = 3.55) for males within ST and MA approaches, respectively. Among the affect scores, 35.84 (SD = 3.25) for males within the MA approach was the highest, while 34.36 (SD = 2.49) for females in the ST approach was the lowest. Total attitude was slightly higher at 69.44 (SD = 6.19) for schools in the MA approach than the ST approach (68.55, SD = 5.10), with males scoring higher (69.29, SD = 6.34; 68.94, SD = 5.61) than females in similar fashion (69.57, SD = 5.10; 68.17, SD = 4.82).

Differences in Attitude

For the four attitude sub-factors (i.e., CC, CT, AC, AT), a MANOVA showed no significant differences for curricular approach, Wilks' Lambda = .746, $F(4, 15) = 1.28$, $p > .05$. A MANOVA for the attitude main factors, cognition and affect, also showed no significant difference, Wilk's Lambda = .759, $F(2, 17) = .702$, $p > .05$. Last, a t-test examining difference in overall attitude between the two curricular approaches showed no significant difference for the curricular approach, $t(18) = .46$, $p > .05$.

Discussion

This study was one of the first to investigate the effect of physical education curricular approach on student attitude toward physical education. Specifically, this study investigated differences in upper elementary school children's attitudes toward physical education when they were enrolled in classes taught through the ST or MA approaches. It also investigated these attitudes by gender. Findings in these areas may ultimately lead to more positive physical activity habits for a lifetime.

The results of this study suggest that, similar to previous research with upper elementary school grade levels (Phillips & Silverman, 2015), students overall enjoy physical education (M = 17.33, SD = 3.25) and think it is important (M = 16.92, SD = 16.92). The students at the schools in the study were highly diverse and from various cultural and socioeconomic backgrounds covering four states. This diversity supports a broad perspective that students enjoy physical education. This is not surprising, given the grade levels.

Table 3
Means by Curricular Approach by Gender, Sub-Factors, Main Factors, Overall Attitude

Curricular approach		Males							Females						
		CC	CT	AC	AT	Cog	Aff	Total attitude	CC	CT	AC	AT	Cog	Aff	Total attitude
ST	*M*	17.23	17.01	17.45	17.25	34.24	34.70	68.94	16.89	16.90	16.88	17.48	33.80	34.36	68.17
	SD	1.39	1.69	1.27	1.57	2.94	2.76	5.61	1.52	1.18	1.32	1.26	2.55	2.49	4.82
	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MA	*M*	16.57	16.88	18.00	17.83	33.45	35.84	69.29	17.23	16.98	17.67	17.69	34.21	35.36	69.57
	SD	2.15	1.72	1.79	1.78	3.55	3.25	6.34	1.90	1.92	1.30	1.62	3.72	2.77	6.39
	N	9	9	9	9	9	9	9	10	10	10	10	10	10	10
Total	*M*	16.92	16.95	17.71	17.53	33.87	35.24	69.11	17.06	16.94	17.28	17.58	34.01	34.86	68.87
	SD	1.77	1.66	1.52	1.66	3.17	2.98	5.80	1.69	1.55	1.34	1.41	3.11	2.61	5.55
	N	19	19	19	19	19	19	19	20	20	20	20	20	20	20

Note. Mean values calculated from school means. CC = cognitive-curriculum; CT = cognitive-teacher, AC = affect-curriculum; AT = affect-teacher; Cog = cognitive; Aff = affective; ST = skill-themes; MA = multiactivity.

Studies (Montalvo & Silverman, 2008; Subramaniam & Silverman, 2007) have shown that student attitude toward physical education begins to decline after these grade levels, in the middle school and later years.

It has been suggested (Phillips & Silverman, 2015) that the grade level at which attitude starts to decline can be as young as fourth grade. The results of this study contrast with that. Overall, student means in fourth (68.87, *SD* = 5.61) and fifth (69.32, *SD* = 5.86) grades were found to be nearly identical. There is a need for more research on attitude toward physical education at these grade levels, for a better perspective of whether the decline begins in the upper elementary grades.

Research suggests that physical activity levels decrease as student age increases (Sallis, 2000). This presents a concern because of the obesity epidemic among youth (U.S. Department of Health and Human Services, 1996). Obesity is of considerable clinical and public health concern, and unfortunately, children who are obese are likely to remain obese into adulthood (Serdula et al., 1993). If factors influencing a decline in student attitude toward physical education at the upper elementary levels can be identified and addressed, perhaps children can develop more positive physical activity habits. If these positive habits can be created, it is less likely that childhood, and therefore adult, obesity will occur.

Sparse research has been undertaken regarding the physical education approach as a factor influencing upper elementary children's attitude toward physical education. After extensive lengths to verify the approach for 20 schools, including 10 ST and 10 MA, were taken in this study, no significant attitude differences were found. As approaches, ST and MA differ substantially in their characteristics. Discovering reasons why there was no significant difference would prove interesting. It could be that students this age have high attitudes toward school subjects in general. Studies have investigated kinesthetic learning in the classroom (Begel, Garcia, & Wolfman, 2004). Forty to 85% of children are kinesthetic learners (Dunn & Dunn, 1978). Physical education is a subject involving movement, or kinesthesis. It follows, then, that most children's attitudes will be high overall while they move during physical education, regardless of the approach.

The teachers in this study may have influenced students' attitude. The AT sub-factor mean was the highest overall among the sub-factors, though it varied by school. It is well documented that the teacher has a very strong influence on student attitude toward physical education (Carlson, 1995; Ennis, 1996; Subramaniam & Silverman, 2000). The findings in this study suggest that upper elementary school children's attitude toward physical education may be influenced by the teacher. This is similar to the results of research on middle and high school student attitudes toward physical education (Montalvo & Silverman, 2008; Subramaniam & Silverman, 2007).

Studies have suggested that curricular approaches employing competitive sports and activities and repetitive activities lead to less than favorable attitudes toward physical education (Bernstein et al., 2011; Carlson, 1995; Ennis, 1996; Subramaniam & Silverman, 2002). In this study, one might expect the MA schools' overall mean to be lower than the ST schools' overall mean, based on the MA characteristics and the above studies' implications. There was no difference in student attitude, however, between the ST and MA schools. Individual teacher behavior may be a reason for no attitude difference in overall means. Understanding relationships among teacher planning, teaching behavior, and student attitudes may provide more insight into the dynamics of what occurs in the gymnasium. This would also be of interest to teacher educators in providing direction to teacher candidates as the teacher candidates plan lessons for the development of positive student attitudes in upper elementary students.

The different ranges of scores in the ST and MA schools proved interesting. Although there was no difference in overall means by approach, the range of the school means in the ST category was approximately 10 points (62.13–72.18), while the MA schools' range was nearly 17 points (59.62–76.30). The large standard deviation associated with many schools' means may have made it difficult to find a significant difference between the curricular approaches. This occurred more often in the MA approach than in the ST approach, indicating that more variable student attitude occurred in the MA approach.

By virtue of the different sizes of the ranges of the approaches, it is possible that instructional decision making by the teacher (i.e., the

curricular approach used) may have influenced students. It is not surprising that there were higher school means in the MA approach. The lowest school means, however, were also within the MA approach. The MA's use of competition is consistent with the notion of variable (e.g., less than favorable) attitudes toward physical education in competitive curricula.

This study adds to the literature on what influences fourth- and fifth-grade children's attitudes toward physical education. Overall, students in these grades had positive attitudes. Boys and girls had similar attitudes, as did fourth- and fifth-grade students. Affect and cognition appear to influence student attitude in elementary school in similar ways. Curricular approaches appear not to affect attitude as a whole, though the MA approach sees a wider range of attitude and the ST approach a more consistent attitude. The teacher as a contextual factor, however, may influence attitude, and future analysis should examine teaching issues in addition to the curricular approach. If students are to have a positive elementary school experience that influences their future physical activity, understanding the factors that influence attitude is necessary.

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PEDAGOGY

PETE Teacher Candidates' Preferred Teaching Styles

Carol Wilkinson, David Barney, William F. Christensen

Abstract

This study examined the chosen teaching styles of teacher candidates in a university PE high school teaching methods course (a) to see if teaching styles were chosen with equal probability and (b) to see if there was a difference of the distribution of styles used by males compared to females. A chi-square goodness of fit test determined if one or more teaching styles was more popular than at least one other, and a post hoc test compared all pairs of proportions. A two-sided normal-based test tested whether reproductive and productive styles were equally popular. A test for independence of gender and preferred teaching style was conducted, followed by post hoc tests. The following pairs of teaching style proportions were significantly different: practice with all the other styles except reciprocal. Overall, reproductive styles were more popular. Female candidates preferred reproductive styles at a significantly higher rate than male candidates did, and male candidates preferred productive styles at a significantly higher rate than female candidates did. Reasons for style preference are explored and recommendations made for environmental enhancements that help teachers to develop productive styles.

Helping students to learn in physical education (PE) is a challenge, as classes comprise students with varying abilities and interests.

Carol Wilkinson is an associate professor, Department of Teacher Education, Brigham Young University. David Barney is an associate professor, Department of Teacher Education, Brigham Young University. William F. Christensen is a professor, Department of Statistics, Brigham Young University. Please send author correspondence to carol_wilkinson@byu.edu

In addition, learning in this environment must be linked to motor, cognitive, and affective educational dimensions (SHAPE America, 2013). One aspect teachers must decide upon when planning lessons is what instructional methods to use to help their students learn. Within PE, a well-known formal system of instructional frameworks is the Spectrum of Teaching Styles (Mosston & Ashworth, 2008), which consists of 11 styles designed to create different environments that aid all students' learning. The 11 teaching styles fall into reproductive and productive styles. The goal of the reproductive styles (command, practice, reciprocal, self-check, and inclusion) is to reproduce known knowledge and skills. The goal of the productive styles (guided discovery, convergent discovery, divergent discovery, individual program, learner initiated, and self-teaching) is to engage the students in higher order thinking skills such as problem solving, creating, and synthesizing that help students produce new knowledge (Mosston & Ashworth, 2008).

Since the Spectrum's development, research has been conducted on its teaching styles and over the past two decades researchers have explored PE teachers' views of these styles and use of these in their teaching. In the United Kingdom, the practice style was used more frequently than the other Spectrum styles by PE teachers (Curtner-Smith & Hasty, 1997; Curtner-Smith, Todorovich, McCaughtry, & Lacon, 2001), reproductive styles were used more often (Macfadyen & Campbell, 2005), and PE teachers felt the reproductive styles were the most appropriate to cover the standards in the National Curriculum in Physical Education.

In an international study of British, South Korean, Australian, French, Portuguese, Canadian, and American PE teachers, Cothran et al. (2005) also found that teachers value and use more the reproductive styles than the productive styles. This finding was confirmed in a study in Finland (Jaakkola & Watt, 2011).

A study in the U.S. investigated PE teachers' self-reporting of their use and perceptions of the teaching styles (Kulinna & Cothran, 2003). In the study, teachers completed the Physical Education Teachers' Perceptions of Teaching Styles instrument (Cothran, Kulinna, & Ward, 2000) and reported using many of the styles in their lessons; however, they used the productive styles was less than

the reproductive styles. Cothran et al. (2000) felt that many of the PE teachers lacked experience with the productive teaching styles.

Based on the instructional diversity that the teaching styles provide, preservice teacher candidates would benefit from learning to use different styles if they are to be successful in aiding student learning. Little research has been conducted regarding usage of teaching styles by teacher candidates. In one study, Greek PE student teachers self-reported usage of the teaching styles in their lessons (Syrmpas & Digelidis, 2014). They most frequently reported using the command and practice styles but also quite often used the guided discovery style (a productive style). The researchers felt the reason for the high incidence of the guided discovery style was because this style resembles Socrates's method of investigation. The Greek education system presents Socrates as one of the greatest teachers, and identifying with such a powerful model seemed logical. The researchers found no gender differences in this study (Syrmpas & Digelidis, 2014).

Zeng (2016) explored student teachers' self-report of their use and perception of teaching styles. The student teachers used reproductive styles more often but believed that both reproductive and productive styles were beneficial for students. Zeng found no gender differences regarding their use and perception of the styles.

White (1998) studied the perceptions of PE teacher candidates regarding the extent of use and exposure to the Spectrum styles. She found most teacher candidates felt adequately prepared to teach the command and practice styles, while few were ready for the learner-designed individual program and self-teaching styles. She also reported a significant difference in candidate and faculty perceptions of how effectively the candidates were prepared to use the Spectrum styles, with candidates feeling they were better prepared to use the styles than the faculty did. Female candidates perceived greater use of selected reproductive styles and male candidates perceived greater use of selected productive styles.

Based on the paucity of teaching style research with this preservice population and the conflicting gender findings regarding usage, the purpose of this study was (a) to see if teaching styles were chosen with equal probability in a university PE high school teaching methods course and (b) to see if there was a difference of the distribution of styles used by males compared to females. The null hypothesis

was that (a) there would be no difference between the teaching styles and they would be equally popular and (b) there would be no difference of the distribution of styles used by males compared to females. These null hypotheses were chosen for evaluation because we believe that in fact some teaching styles will be significantly more popular than others and that males will employ a different mix of styles than females.

Method

This study was conducted in a PE teacher education (PETE) program at a university located in the Intermountain West of the United States between 2011 and 2017. The participants were 104 PE teacher candidates taking a high school teaching methods course (28 males, 76 females) and were predominantly Caucasian ($n = 89$), followed by Hispanic ($n = 6$), Pacific Islander ($n = 4$), African American ($n = 3$), and Asian ($n = 2$).

At the university, a PE high school teaching methods course is taught each fall semester. During field teaching experiences in the schools, students must provide video evidence of teaching competencies. To determine these teaching competencies in all teaching methods courses, faculty studied the *National Standards for Physical Education Teacher Education* (National Association for Sport and Physical Education, 2009), the *Guidelines for an Introductory Undergraduate Course in Physical Education Teacher Education* (National Association for Sport and Physical Education, 2010), the state standards for higher education programs, the state core standards for PE for K–12 students (Utah Education Network, 2017a, 2017b), and the Teacher Education Accreditation Council (2014) standards (now the Council for the Accreditation of Educator Preparation, 2015) that the university's teacher education programs must adhere to as its accrediting body, and allowed these documents to inform their teaching competency selection.

Students take three teaching methods courses (elementary, junior high, and high school) in succession. In each course, candidates have to show video evidence of the teaching competencies required for that course. Competencies are added to each successive course.

Teaching styles are taught and modeled by the instructor in each methods course. During the latter half of the high school methods course, teacher candidates teach in the schools and are recorded by one of their peers. Once back on the university campus in the computer lab, they upload their teaching video into StudioCode, a digital video editing software. Then using coding buttons for the predetermined teaching competencies, the candidate finds, codes, and saves a video clip of the best example of each competency. One of the competencies that candidates must show evidence of is use of Mosston's command style of teaching. The candidates must also provide a video clip of another teaching style besides the command style. They choose from a list that includes the styles of practice, reciprocal, self-check, inclusion (reproductive styles) and guided discovery, convergent discovery, and divergent discovery (productive styles) and include that style in their lesson plan. Along with the video clip of the other teaching competency, they must complete a written transcription that describes what they did for that competency. The video clip and transcription are assessed by the candidate and the course instructor. During this process, the instructor verified the teaching style selected by the student. If it was incorrectly labeled, the instructor made a correction. The principal investigator was the instructor of this course and compiled all of the candidates' transcriptions between Fall 2011 and Fall 2017.

Results

Each participant's chosen teaching style was recorded. Five candidates incorrectly labeled their chosen teaching styles and appropriate corrections were made by the principal investigator. Data were screened for missing data prior to any analysis. Descriptive statistics were calculated. All statistical procedures were completed using R software (R Core Team, 2017). Table 1 shows the PETE teacher candidate teaching style preference data. Among males, the most popular styles were the practice (25% of males chose this style) and guided discovery (25%) styles. Among females, the most popular style was the practice style (39.5%), with the reciprocal style (19.7%) being the next most popular.

Table 1
Teaching Style Preferences

Teaching style	Males *n* (%)	Females *n* (%)	Total *n* (%)
Practice	7 (25)	30 (39.5)	37 (35.6)
Reciprocal	1 (3.6)	15 (19.7)	16 (15.4)
Self-Check	1 (3.6)	8 (10.5)	9 (8.7)
Inclusion	5 (17.9)	3 (3.9)	8 (7.7)
Guided Discovery	7 (25)	4 (5.3)	11 (10.5)
Convergent Discovery	3 (10.7)	11 (14.5)	14 (13.4)
Divergent Discovery	4 (14.3)	5 (6.6)	9 (8.7)
Total	**28 (100)**	**76 (100)**	**104 (100)**

A chi-square goodness of fit test was calculated to see if one or more teaching styles was more popular than at least one other. The null hypothesis was that each style would be chosen an equal proportion of the time. In other words, the null hypothesis was

$$H_0: \boldsymbol{p} = \begin{bmatrix} p_1 \\ p_2 \\ \vdots \\ p_7 \end{bmatrix} = \begin{bmatrix} 1/7 \\ 1/7 \\ \vdots \\ 1/7 \end{bmatrix},$$

where p_i is the proportion of teachers preferring teaching style i ($i = 1, \ldots, 7$). Significant deviation from the hypothesized values was found, $\chi^2(6) = 41.92$, $p > .0001$. We conducted a post hoc test comparing all pairs of proportions. Because tests of the form $H_0: p_i = p_j$ ($i \neq j$) represent comparisons of dependent proportions from the same multinomial vector, we use the statistic

$$Z = \frac{\hat{p}_i - \hat{p}_j}{\sqrt{\frac{\hat{p}_i(1-\hat{p}_i)}{N} + \frac{\hat{p}_j(1-\hat{p}_j)}{N} + 2\frac{\hat{p}_i\hat{p}_j}{N}}},$$

which is approximately Gaussian for large N. Because we simultaneously considered all $\binom{7}{2} = 21$ pairwise comparisons, we used a Bonferroni adjustment and considered a p value to be statistically significant only if it was less than 0.05/21 = 0.00238. The following pairs of teaching style proportions were statistically significant:

$p_{\text{Practice}} > p_{\text{Inclusion}}$ ($p < 0.0001$), $p_{\text{Practice}} > p_{\text{Self-check}}$ ($p < 0.0001$), $p_{\text{Practice}} > p_{\text{Guided}}$ ($p < 0.0001$), $p_{\text{Practice}} > p_{\text{Convergent Discovery}}$ ($p = 0.0007$), and $p_{\text{Practice}} > p_{\text{Divergent Discovery}}$ ($p < 0.0001$); this means the practice style was more popular than the other styles except the reciprocal style.

A test for independence of gender and preferred teaching style was conducted. In other words, the null hypothesis was that the distribution of styles chosen by females would be equal to the distribution of styles chosen by males:

$$H_0: \boldsymbol{p}_{\text{F}} = \begin{bmatrix} p_{1|F} \\ p_{2|F} \\ \vdots \\ p_{7|F} \end{bmatrix} = \begin{bmatrix} p_{1|M} \\ p_{2|M} \\ \vdots \\ p_{7|M} \end{bmatrix} = \boldsymbol{p}_{\text{M}},$$

where $p_{i|F}$ and $p_{i|M}$ ($i = 1,\ldots,7$) are the probabilities of preferring teaching style i given that the teacher is female or male, respectively. The standard chi-square test statistic was calculated to be 20.13, but the p value associated with the $\chi^2(6)$ distribution was invalid because of the low expected cell counts for six of the 14 cells in the table. Consequently, the p value for the test of independence was based on an approximate permutation test using 99,999 random permutations of the data (Higgins, 2004). When the data were randomly permuted so that any dependence between gender and preferred teaching style was removed, the standard chi-square test statistic for the permuted data reached the level of 20.13 a total of 238 times. Thus, the permutation-based p value is less than 0.0024. Associated with the chi-square of 20.13 is a Cramér's V 0.440, which is recognized as a medium to large effect size (Cohen, 1988).

A set of seven post hoc tests were run to evaluate whether the proportion of males preferring teaching style i was equal to the proportion of females preferring teaching style i *($i = 1,\ldots,7$)*. Specifically, we tested the null hypothesis

$$H_0: p_{i|\text{F}} = p_{i|\text{M}}, i = 1, \ldots, 7$$

For each comparison, we calculated a z statistic to compare the proportion of males with the proportion of females choosing each style. Because of the small sample size for some of the teaching styles, we could not assume a Gaussian distribution under the null hypothesis

for some of these z statistics. Consequently, we used Fisher's exact test to evaluate whether there was a statistically significant difference between the proportions (e.g., to evaluate whether gender is independent of preference). The p value for each test was derived from the hypergeometric distribution. To protect against Type I error inflation, we again used a Bonferroni adjustment, which accounts for seven tests. A comparison was considered significant if the p value was less than 0.05/7 = 0.0071. Although $p_{i|F}$ seemed to differ from $p_{i|M}$ for some of the styles (especially inclusion, reciprocal, and guided discovery), the sample size within each of the styles was too small to claim statistical significance with a Bonferroni adjustment. The style that was closest to statistical significance was the guided discovery style ($p_{\text{Guided|Male}} = 0.250$, $p_{\text{Guided|Female}} = 0.053$, $p = 0.0079$). However, as described, the overall dependence of gender and style preference is still compelling based on the overall test's p value of 0.0024.

The practice, reciprocal, self-check, and inclusion styles are reproductive styles and the guided discovery, convergent discovery, and divergent discovery are productive styles. When testing whether the reproductive and productive teaching styles were equally popular, we used a two-sided normal-based test that the proportion selecting each class was equal to 0.5. This test rejects the null hypothesis with a p value of 0.0006, $\chi^2(1) = 11.78$, $p > .0006$, and we concluded that reproduction styles were significantly more popular than production styles overall.

Males were equally split between reproductive ($n = 14$) and productive ($n = 14$) styles, whereas 73.6% of the females chose reproductive ($n = 56$) styles over productive styles ($n = 20$). Using Fisher's exact test for assessing the independence of gender and teaching style preference (reproductive vs. productive), we obtained a p value of 0.0332. That is, there was only a 3.3% chance that we would see this degree of gender differences in style preferences if gender were in fact independent of style preference. Thus, female candidates preferred reproductive styles at a significantly higher rate than male candidates did and male candidates preferred productive styles at a significantly higher rate than female candidates did.

Qualitative Analysis of Transcriptions

We wanted to see if candidates' transcription comments might inform the quantitative data regarding candidates' style selec-

tion. We used an inductive content analysis to analyze candidates' comments in the transcription data and the constant comparative method (Lincoln & Guba, 1985) to compare, contrast, and categorize each unit of information. We proximally placed, examined, and reexamined similar chunks of text to identify commonalities.

A researcher may assume diverse membership roles while involved in qualitative research. There are three principal roles that may be assumed: (a) the complete member, (b) the active member researcher, and (c) the peripheral member researcher (Adler & Adler, 1994). The researchers assumed the role of active member researcher while they taught PETE classes where teaching competencies were used.

We used member checking when students' interview comments needed further explanation. We asked students for clarification via e-mail or in person. We used investigator triangulation (the use of several different researchers). One of the researchers had the role of peer debriefer in clarifying the primary researcher's interpretation of the data (Lincoln & Guba, 1985). A university PETE professor not involved in organizing the student interviews or analyzing the data assumed the role of auditor (Lincoln & Guba, 1985) and examined the data and the process of data analysis.

Qualitative Results

The results of the inductive content analysis of candidates' transcription comments revealed several reasons why candidates chose a specific teaching style. For each teaching style, several categories emerged from candidates' comments. Raw data consisted of a short phrase to an extended paragraph. For each teaching style, we will address each category.

Practice Style

Increased teacher–student interaction. Several teacher candidates felt that the practice style allowed them more time to observe, give feedback to, and develop rapport with the students. One female stated,

> I had the students each at a station with a partner. They would rotate at a certain time interval. This was a great time to build rapport with the students. I could rotate amongst the students and give them feedback.

Efficient coverage of content. Using stations allowed candidates to effectively cover lesson content. One male elaborated,

> I had the students doing different stations. This was my second time teaching this same content to the class, so we had a good system down that they were familiar with. They were able to get through the different stations very quickly so that we could move on.

Student autonomy. The practice style allowed students to have choice of work pace. A female stated, "The students are working in stations at their own pace. They were in charge of their work and their effort. It was a really great activity actually."

Students engaged and motivated. The variety of activities in the different stations helped to motivate the students. One female created a cardio circuit and enthused, "I had the girls working on cardio equipment in different stations and then rotating through in a team competition. The girls were very engaged and I think it was a creative and effective activity."

Reciprocal Style

Student feedback. Using the reciprocal style enabled the students to receive peer feedback. One candidate stated,

> I used this style by having students work with partners during volleyball drills to provide feedback to each other. I thought that this was very good for the students to not only practice the cues on their own, but make sure that their partner was doing the cues while they were watching them and throwing the ball to them. This was a great way to make sure that the students knew the cues and had the opportunity to work with other students.

Student collaboration. One female teacher candidate said,

> I did circuit training for one lesson to demonstrate the task/station teaching style. The girls were in partnerships as they rotated through different stations in the circuit. At each

station I expected them to do the designated exercise and decide with their partner if that exercise was isometric or isotonic. We had just talked about the difference between those exercises in class, along with different types of weight training activities like circuit training. Allowing them to apply both of these concepts in the gym at each task was a great teaching opportunity. Students not only got to learn about it in the classroom, but they got to apply what they learned so it made more sense to them. Each station was different and the girls were required to both think and workout at each station.

Student teaching. Another female stated, "After going through the cues of the lifts with them, I asked them to teach and demo cues to their partner . . . This gave me time to walk around and make individualized corrections to girls who were needing more help."

Self-Check Style

Written record. One male stated,

> I gave them a paper with five different styles of hits. I demonstrated each hit. They went with their partner and practiced each hit at least 10 times on their own, checking hits off on the paper. I circulated to evaluate. The worksheet worked well, but in the future instead of five new hits I will use three instead. After [they practiced on their own], I brought them back to review the hits to test knowledge.

Good participation. One female said,

> I used stations to help teach different skills testing and each station also included practice time, written instructions, as well as score sheets to measure their achievement level. This worked out so well and was very beneficial for the students because it was on a personal level. They were able to participate at their own level and grade themselves accordingly. I had max participation from the students as a result.

Inclusion Style

Students work at own level. A male explained,

> For our fitness circuit we created five posters that each had a different required task. Each poster had three levels of difficulty that the students could choose from. The circuit was based on individual need and desire so the students were free to choose the level of intensity and nature of their workout.

Good participation. One male stated,

> On the rock wall we told the students to choose from the easy green color or yellow, blue, and red. This allowed the students to go at their own pace and level and find out how to make it through the rock wall using their own experience. As they accomplished each color they felt successful . . . I felt like it was a success because everyone was participating.

All of the productive styles in this study (guided discovery, convergent discovery, and divergent discovery) had the same categories: individual discovery and collaborative discovery.

Guided Discovery

Individual discovery. In a 10th-grade Fitness for Life class, one female stated

> I posed questions on a topic and then posted the answer on the classroom wall. I did this with several topics all over the walls and allowed students to walk around and find the answers for themselves as opposed to reading it out of a book. This helped them learn the information firsthand by searching for and finding the correct answer to each question.

Collaborative discovery. Another female explained the importance of having students work together: "I had the class split into three teams. Each team was given questions to lead them to an answer. As a team, the girls collaborated to find the answer then all the teams shared their answer with the class."

Convergent Discovery Style

Individual discovery. One female stated, "We were talking about flexibility in the PowerPoint presentation. As the students worked on their individual packets, I asked the students which joints need to be flexible to rock climb."

Collaborative discovery. A male explained,

> I let the class tell me what they thought the cues for shooting were to see what they already knew. Then after a student demoed the skill, I had them go in their groups and see if they could figure out what elbow position felt most comfortable for a good shot.

Divergent Discovery Style

Individual discovery. One creative female stated,

> I instructed the girls to spread out with their partner on two different lines 8 to 10 feet apart and pass the ball back and forth. I asked them to explore the different ways to pass and pay attention to how they chose to pass. Then each of them were to come up with cues they would use to teach passing.

Collaborative discovery. A female said,

> I split the class into two groups and asked them to discuss why they thought breakfast would be important. This gave them the opportunity to come up with some of their own answers to share with the class before I taught them the material.

A few candidates who used the divergent discovery style expressed concern about the control of the class. One female stated, "I thought they might be out of control. It is a bit scary to let go of total control over the students and let them explore."

Discussion

The purpose of this study was (a) to see if teaching styles were chosen with equal probability in a university PE high school teaching

methods course and (b) to see if there was a difference of the distribution of styles used by males compared to females. Based on the descriptive results of this study, the practice style was the most popular style for women (39.5% of women chose this style), with the reciprocal style being the next most preferred style for women (19.7%). Among the men, the most preferred styles were the practice style (25%) and the guided discovery style (25%). The result of post hoc tests following the chi-square goodness of fit test to see which style was statistically the most popular, revealed that for all candidates the practice style was more popular than the other styles except the reciprocal style. This finding regarding the popularity of the practice style concurs with findings in previous research (Kulinna & Cothran, 2003; Syrmpas & Digelidis, 2014; White, 1998). Reasons that emerged from the qualitative analysis of candidates' transcription entries as to why they chose the practice style were student–teacher interaction increased, it was an efficient way to cover the content, it gave students autonomy, and students were engaged and motivated.

Reproductive and Productive Teaching Styles

Reproduction styles were significantly more popular than production styles overall. This result is in line with results from other research on PE teachers (Cothran et al., 2005; Jaakkola & Watt, 2011; Macfadyen & Campbell, 2005), with student teachers (Syrmpas & Digelidis, 2014; Zeng, 2016), and college students' reports of their K–12 PE teachers (Cothran et al., 2000).

This poses the question as to why teachers use the reproductive styles more often than the productive styles. Frequent use of the reproductive styles differs to the constructivist approach, which would imply that productive styles encourage more effective learning and should be implemented often (Morgan, Kingston, & Sproule, 2005). In a study of student teachers' perceptions, Zeng (2016) found they believed that using reproductive styles (command, practice, reciprocal, inclusion) and productive styles (guided discovery, convergent discovery, and divergent discovery) in their teaching aided student learning, yet they used reproductive styles more frequently.

One reason for the use of reproductive styles is that PE teachers perceive that the reproductive styles are more beneficial (Cothran

et al., 2005; Jaakkola & Watt, 2011; Kulinna & Cothran, 2003). Candidates' comments from the qualitative analysis in this study revealed the following positive outcomes from the use of reproductive styles (in addition to the comments made about the benefits of the practice style): more time for teacher feedback, maximum student participation, and student success.

Another reason for the use of reproductive styles may concern the amount of teacher control within a style. Thornburn and Collins (2003) stated that the reproductive styles have been considered to be a powerful way for PE teachers to control the learning environment. From the qualitative results of this study, some students mentioned they were concerned about a lack of control with the divergent discovery style (a productive style). Many teachers value class control over class learning (Cothran & Ennis, 1997), and this might especially be the case for preservice teachers.

Although the overall test for independence of gender and preferred teaching style was significant with a medium to large effect size, post hoc tests did not reveal significance, due to the small sample size within each style. The style that was closest to statistical significance was the guided discovery style (25% of males chose this style compared to 5.3% of women), one of the productive styles (Mosston & Ashworth, 2008). This is an interesting finding in light of our results, which showed that male candidates preferred productive styles at a significantly higher rate than female candidates did and female candidates preferred reproductive styles at a significantly higher rate than male candidates did, in line with the findings of White (1998). However, this is in contrast to the work of Zeng (2016), who found no gender differences in student teachers' use of the styles. It is possible that the males in this study were more confident in the use of productive styles because they had feelings of greater class control than females did.

Another reason for reproductive style preference could be the proven effectiveness of those styles in motor skills acquisition (Byra, 2000) and the view of PE teachers that these styles are efficient and promote skills acquisition and knowledge attainment (Cothran & Kulinna, 2008). Calderhead (1996) suggested that student teachers' prior experience as school students greatly influences their conceptions about their students' learning process. If PE teacher candidates

do not receive the same exposure to the productive styles as to the reproductive styles, this could prevent them from reconstructing their existing beliefs and teaching practices to try the productive styles (Zeng, 2016). Making sure that sufficient time is dedicated to this process is crucial, as Postareff, Lindblom-Ylänne, and Nevgi (2007, 2008) stressed that a short educational period is not enough to influence educators to adopt productive teaching styles. One final reason for the use of reproductive styles is that many school students in the United States prefer those styles over the productive styles (Cothran et al., 2000).

It is important to mention that the candidates in this study possibly used other styles during their teaching. This study focused on their best video example of a style.

Conclusion

The purpose of this study was (a) to see if teaching styles were chosen with equal probability in a university PE high school teaching methods course and (b) to see if there was a difference of the distribution of styles used by males compared to females. The key findings of this study are that (a) the practice style is the most frequently used teaching style, (b) reproductive styles were more popular, and (c) females used the reproductive styles more than males did and males used the productive styles more than females did.

From the results of this study and other studies, it appears that the experiences that are occurring in teacher preparation are not enough to encourage candidates to implement productive styles. Guskey (1986) stated that for change to occur, teachers must first see positive results from their new efforts if attitudinal change toward those efforts is to be positive and thus promote further use. Based on this view, it seems necessary for PETE programs to allow candidates more time (Kulinna & Cothran, 2003) and more enriching experiences with the productive styles, making sure candidates progressively construct lessons using the styles in various class settings (Cothran et al., 2005; White, 1998), to help all students become confident in using all styles.

Further research needs to examine why teacher candidates and in-service teachers use the styles they do and why they do not implement the productive styles more often. One limitation of this study

was that it took place at one university in the Intermountain West of the United States.

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PEDAGOGY

Effects of Common Core State Standards on Student Physical Activity Rates and Student and Teacher Perceptions in Physical Education

Clancy M. Seymour, Kiel Illg, James P. Donnelly, Karl F. Kozlowski, Christopher Lopata, Marcus L. Thomeer

Abstract

Since its development in 2010, the Common Core State Standards (CCSS) have been adopted in over 40 states. While the literature discussing the implications of this initiative is robust, the research examining its effect on K–12 physical education (PE) is limited. Moreover, there is little empirical data on the effect of the CCSS on student physical activity (PA) rates in PE. Thus, this study examined the effect of CCSS instructional integration into PE lessons on PA rates of sixth-grade students and on student and teacher perceptions in a public K–12 school. This study utilized a one-group within-subjects randomized design. Rates of PA were compared between PE classes that integrated the CCSS (i.e., CC+) and PE classes that did not integrate the CCSS (i.e., CC-). Student and teacher perceptions of the lessons were also studied.

Clancy M. Seymour is an assistant professor and director of Physical and Health Education Teacher Education, Department of Kinesiology, Canisius College. Kiel Illg is assistant superintendent of Lackawanna City School District. James P. Donnelly is a professor, Counseling and Human Services, Canisius College. Karl F. Kozlowski is an associate professor, Department of Kinesiology, Canisius College. Christopher Lopata is a professor, Teacher Education, Canisius College. Marcus L. Thomeer is a professor, Teacher Education, Canisius College. Please send author correspondence to seymourc@canisius.edu

In addition, the feasibility (i.e., acceptability) of the use of an objective measure of PA intensity (accelerometer) was assessed. A linear mixed model analysis of percentage of time in moderate-to-vigorous PA (MVPA) produced a significant effect for condition, CC+ M = 19.7%, SD = 7.0; CC- M = 33.1%, SD = 10.4, F(1, 24) = 182.82, p < .001, d = 1.46, 95% CI [.88, 2.41]. The mixed-model analysis of total steps per minute also produced a significant difference by condition, CC+ M = 20.99, SD = 9.46; CC- M = 32.76, SD = 9.46, F(1, 21) = 133.45, p < .001, d = 1.48, 95% CI [.90, 2.15]. Linear mixed-model analysis of student and teacher perceptions showed no significant differences on any of the six items, indicating general agreement. Intraclass correlations of the student and teacher reports were 0.70 for the CC- items and 0.68 for the CC+ items, again demonstrating general agreement between students and the teacher. Students reported that the accelerometer was "easy to wear" (4.05 out of 5.0); the teacher report was slightly higher (4.83 out of 5.0). Large effect sizes on both PA dependent measures suggest that CCSS integration tasks may have a significant negative effect on PA levels. Student and teacher reports did not differ between CC+ and CC- lessons on a number of lesson attributes and also suggest that the use of accelerometers to measure PA is acceptable. More research needs to explore whether these results generalize to other settings, teachers, students, and activities and examine the overall effect of the CCSS on fitness across the school year. In addition, future research should examine whether certain types of CCSS integration tasks may be more successful with sustaining MVPA.

The Common Core State Standards (CCSS) were developed in 2010 to establish K–12 benchmarks for mathematics and English Language Arts (ELA) nationally while preparing each child for college, a career, and life pursuits (Common Core State Standards Initiative, n.d.-a). Recognizing the importance of other K–12 content in achievement of these goals, the CCSS have defined academic disciplines such as physical education (PE) as technical subjects and suggest that instructors in these content areas provide support for the attainment of the CCSS (Common Core State Standards Initiative, n.d.-b; James & Bullock, 2015). The CCSS do not include any specific provisions for K–12 PE, yet public school physical educators are being asked to integrate literacy skills (learned in English and mathematics classes) into their daily instruction in PE (James & Manson, 2015; James-Hassan, 2014a).

The literature on the broad implications of educational reform and the CCSS in K–12 education is extensive and highlights significant disagreement between proponents and critics (e.g., Au, 2013; AccountabilityWorks, 2012; Conley, 2011; Mathis, 2010; Mercier & Doolittle, 2013; Phillips, Mercier, & Doolittle, 2017; Saltman, 2014). However, the debate is largely uninformed by research examining the effects of the CCSS in PE. Available publications (James & Bullock, 2015; James-Hassan, 2014a, 2014b; Mercier, Whitley, & Manson, 2014) are generally devoted to prescriptive techniques from PE professionals to support the CCSS initiative and the potential role of PE. For example, James and Bullock (2015) provided suggestions for practitioners to integrate the CCSS in the PE setting. Examples include exit slips, in-and-outside class projects including homework, and summary paragraphs.

James-Hassan (2014a, 2014b) also supported the integration of the CCSS in PE and recommended that all K–12 content areas address CCSS ELA and mathematics strands.

> It can be argued that for the CCSS to achieve their intended impact, focus and support must be given to ensure that they are implemented and reinforced in all content areas. It is explicitly written that the common assessments and the curricula that support the standards recognize the importance of complex, challenging, nonroutine applications of knowledge. (James-Hassan, 2014a, p. 9)

From this perspective, "nonroutine" applies to academic content areas like PE where previously ELA and mathematics were not emphasized. Embracing this approach could help strengthen the reputation of the discipline within the school community and at the same time may improve standardized test scores in ELA and mathematics (James-Hassan 2014a). Mercier et al. (2014) agreed and connected the current CCSS initiative to past efforts by the PE profession to infuse literacy concepts into daily instruction. James and Manson (2015) also supported this position and suggested that interdisciplinary learning in PE is not a new concept to physical educators, identifying various studies that highlight its positive effects on motor and skill performance.

Similarly, in a review of integration literature in PE from 2004 to 2013, Marttinen, McLoughlin, Fredrick, and Novak (2017) encouraged the PE profession to embrace the integration of literacy in class to solidify the standing of PE in K–12 education. However, they warned that many of the integration studies involved mathematics and not ELA—an important distinction given the CCSS call for PE teachers to integrate the ELA standards.

Conversely, the potential negative effect of CCSS integration on K–12 PE also warrants discussion. Magnotta and Darst (2015) questioned the fit of PE within the framework of CCSS and argued that the research indicating the positive effects of physical activity (PA) on brain development may be overlooked under this structure. PE itself—through PA that creates conditions beneficial to cognitive functioning (without integrating the CCSS)—may enhance and promote academic performance (Magnotta & Darst, 2015; Seymour & Garrison, 2015). For example,

> Students who obtain success in movement skills and fitness education concepts [in PE class] and develop an appreciation for healthy living practices can be stimulated to "want to learn" via different formats. Why cannot physical education stand on its own based on these principles? (Magnotta & Darst, 2015, p. 8)

At the same time, consistent PA and positive attitudes toward being physically active are strongly associated with a wide range of desirable physical, behavioral, cognitive, academic, emotional, and social outcomes (2018 Physical Activity Guidelines Advisory Committee, 2018; American Academy of Pediatrics & Council on School Health, 2013; Bailey, 2006; Datar & Sturm, 2004). Moreover, there is evidence that increasing PA specifically enhances performance on academic achievement tests while improving school attendance and classroom behavior (2018 Physical Activity Guidelines Advisory Committee, 2018; Centers for Disease Control and Prevention, 2010a; Michael, Merlo, Basch, Wentzel, & Wechsler, 2015; Ratey, 2008).

Given these stand-alone benefits, current educational reforms may be pressuring the PE profession to change its focus toward academic skills (Lounsbery & McKenzie, 2015; Mercier et al., 2014, Seymour & Garrison, 2015). For example, teacher evaluation

policies that focus on demonstration of growth in student performance scores may force physical educators to prioritize the cognitive domain at the expense of the psychomotor domain (Seymour & Garrison, 2015).

Despite the ongoing debate, there is a paucity of empirical studies and research needs to investigate the effect of the CCSS on public school K–12 PE. Specifically, studies need to examine the effect of the CCSS on student PA rates during PE classes, as well as on teacher and student perceptions of PE lessons. The purpose of this pilot study was to test whether student PA rates and teacher and student perceptions of lessons differed between PE classes that integrated the CCSS (i.e., CC+) and PE classes that did not integrate the CCSS (i.e., CC-). Given the pilot nature of the study, data were collected on the feasibility (i.e., acceptability) of the use of an objective measure of PA level (i.e., an accelerometer).

Method

Participants

Participants in this study included a PE teacher and middle school students in a suburban public middle school in Western New York. To avoid bias in the administration of the PE lessons, four middle school teachers from the public school district were surveyed for their perceptions of the integration of CCSS into PE lessons (see Measures section for a description of the six-item survey). Results of the survey were used in the selection of the teacher whose responses represented a neutral view (neither positive nor negative) of the CCSS (the selected teacher's mean score was 3.33 on the 5-point scale that ranged from 1 to 5). This process resulted in the identification and selection of a certified PE teacher with 35 years of PE teaching experience. The teacher was a Caucasian female with a bachelor's degree in PE and a master's degree in educational foundations.

Once the teacher was identified and voluntarily agreed to participate, an individual PE class of sixth-grade students was selected for recruitment in the study. A primary factor in selection of this class was that it was scheduled in the middle of the day, which reduced potential conflicts with school assemblies and other events. Parents of the students in the targeted class were provided information about the study and only children whose parents provided written consent

were enrolled in the study. All of the 22 sets of parents of students in the class were approached for participation and 21 (95.5%) agreed and their children completed the study. The student participants were in the sixth grade and between ages 11 (17 or 81%) and 12 (4 or 19%), 12 (57%) being girls and 9 (43%) being boys. In addition, 16 students (76%) were Caucasian (9 females, 7 males) and five (24%) were African American (3 females, 2 males). There was no attrition following enrollment; however, there were four student absences across the six lessons (4/126, 3%); two students missed one class and one student missed two classes.

Measures

This study included individual measures for teacher selection and fidelity monitoring. The effects of the CCSS were assessed via two primary metrics of PA level (moderate-to-vigorous activity level and step counts) and a secondary rating scale survey assessing student and teacher perceptions of the PE lessons and use of the technology (accelerometer) to measure PA.

Physical educator selection survey. To minimize the potential of bias with the CCSS, an assessment of PE teachers' perspectives was conducted. As a result, a PE teacher with a neutral view regarding integration of CCSS into PE was selected. The survey used in the assessment of teachers' views consisted of six items drawn from a larger survey of PE teachers' perceptions of educational standards (Seymour & Garrison, 2016, 2017). Each item was rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*, with a score of 3 indicating a neutral view (neither positive nor negative). In this study, the overall item mean was used in the identification and selection of the teacher to administer the lessons.

Fidelity checklist. Fidelity research regarding the accuracy of intervention implementation is limited and often underreported in PE (Stylianou, Kloeppel, Kulinna, & van der Mars, 2016). For this study, fidelity was assessed in each of the six PE lessons via a standardized fidelity checklist (Figure 1). The checklists were completed by research assistants (RAs) who were trained prior to initiation of the study lessons and observations. The RAs were taught to use the fidelity checklists by watching live and recorded lessons and interobserver agreement of 95.6% was established. The fidelity checklist was designed to assess for the presence of specific lesson components

Lesson: _____ **Date:** _____

Observer 1: _____ **Observer 2:** _____

Class Start Time: _____ **Class End Time:** _____

A warm-up or instant activity was included at the beginning of the lesson	**YES**	**NO**
An anticipatory set was utilized by the teacher to engage and capture the attention of students	**YES**	**NO**
An instructional episode introducing new content for the lesson was utilized by the teacher	**YES**	**NO**
A guided practice session was provided for students to rehearse main themes from the lesson	**YES**	**NO**
The lesson included a culminating activity for the students to practice lesson concepts more independently	**YES**	**NO**
A closure was implemented by the teacher to review lesson objectives and theme	**YES**	**NO**

Common Core State Standards Integration in PE:

Any reading, writing, listening, and speaking task or activity executed in PE class to support the Common Core State Standards in English Language Arts ("How Common Core," n.d).

Check if any of the following English Language Arts literacy task(s) were integrated in the lesson:		
Station cards: During an activity that involves moving between several different stations, create station cards that offer in-depth written instructions for what to do next for critical thinking/comprehension practice ("How Common Core," n.d).	☐	Is at least one box checked? **YES NO**
Read-alouds: Also known as shared reading, read-alouds give students a chance to hear fluent reading. Provide handouts and read aloud while students follow along. They can then keep the handouts to peruse later or to reinforce your verbal ("How Common Core," n.d).	☐	
Bulletin boards: Provide a bulletin board that gives students instructions, gives tasks that must be accomplished, or provides a lesson that they must apply during class. Create a PE word wall that displays important vocabulary—movement words, health terms, names of muscle groups—that will be used throughout the day's lesson ("How Common Core," n.d).	☐	
Supplemental texts: Post or distribute supplemental materials about the sport or skill you are currently covering. For instance, during a unit, post a short history of sport or activity, the basic rules, fun facts, and profiles of athletes ("How Common Core," n.d).	☐	
Setting goals: Have students write goals before an activity or at the start of the week. At the end of the activity or the week, have students provide a post-assessment of what they accomplished and what they could have done better ("How Common Core," n.d)	☐	
Create a new activity/game: Split students into groups and have them write the rules and directions for a new activity or game. They can then provide a quick demonstration of the new task and the best presentation can be chosen for use during the next class ("How Common Core," n.d).	☐	
Other: _____	☐	

The Student Perceptions Survey was administered during the last 5 minutes of class	**YES**	**NO**

Total # Yes	
Total # No	
Percentage	
Date Reviewed	

Figure 1. Fidelity checklist.

including warm-up, anticipatory set, instructional episode, guided practice, culminating activity, and closure. These elements were part of the manualized instructional protocol across conditions and the physical educator was required to include three or more of the six components during each lesson (Harvey et al., 2016). Manualization of these aspects of the lessons provided consistency across conditions and minimized the potential confounding of results by factors other than the CCSS elements. Results indicated that three or more components were exhibited in each of the six lessons (i.e., Lesson 1 = 5/6; Lesson 2 = 5/6; Lesson 3 = 4/6; Lesson 4 = 6/6; Lesson 5 = 3/6; Lesson 6 = 3/6). In addition to these common lesson components, the fidelity checklist in the assessment of whether the physical educator included any one of the CCSS ELA literacy tasks; this was used to establish whether the CC+ lessons included at least one CCSS ELA task and whether the CC- lessons did not include any CCSS ELA tasks. Results indicated that all of the CC+ lessons contained one or two CCSS ELA tasks (M = 1.3 ELA tasks) and that none of the CC- lessons contained any CCSS ELA tasks. Interobserver agreement among the RAs was also assessed during three randomly selected lessons (Lesson 1 CC-, Lesson 2 CC+, and Lesson 4 CC+) and results indicated 95.6% agreement.

Physical activity level (primary outcome measures). Levels of PA were measured during all six lessons via accelerometers. Accelerometry is a well-established objective measure of PA that removes the cognitive challenges commonly associated with subjective assessment of PA (e.g., inconsistent individual assessment of intensity, poor recall of activity level; Troiano, 2006; Troiano et al., 2008). Accelerometers allow for real-time data storage, recognize the intensity of movement, and can detect intermittent and incidental PA. A triaxial GT3X Actigraph accelerometer (Actigraph, n.d.) was used in this study. This device is small and unobtrusive to the wearer (27 g, 3.8 × 3.7 × 1.8 cm) and in this study was fastened to an elastic band that was worn on the waist. With the accelerometer, higher counts indicate a greater level of PA. Studies have consistently supported the reliability and validity of the accelerometer for measuring PA (Crouter, Horton, & Bassett, 2012; Sasaki, John, & Freedson, 2011). In this study, PA was operationally defined as (1) the number of steps per minute and (2) the percentage of total minutes of moderate-to-

vigorous PA (MVPA; defined as activity intensity ≥ 4.00 metabolic equivalents; Freedson, Pober, & Janz, 2005). This PA calculation is the ratio of the metabolic rate during a specific activity to the resting metabolic rate. The number of steps per minute and the percentage of time in MVPA, rather than raw score totals, were used in the analyses because of some variability in the length of the lessons. The students wore the accelerometers for two class lessons prior to initiation of the study to reduce any possible "novelty effects" associated with wearing the accelerometers.

Physical education teacher and student perceptions survey (secondary outcome measures). The PE teacher and student perceptions were assessed via a six-item survey, with each item rated on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. This survey assessed enjoyment of the activities, perceptions of PA level, perceptions of content learned, degree to which the activity was physically challenging, and degree to which the activity was mentally challenging. The final item was included to assess the ease of accelerometer use. The mean of each item across the two lesson types was used in the analyses.

Procedures

Following institutional review board approval, the study was conducted during the 2016–2017 academic school year. Written parental/guardian consent was obtained for all students in the study. For confidentiality, a unique code number was assigned to each student and no personally identifying information was included on any of the study forms/measures or in the database.

This study utilized a one-group within-subjects randomized design. The conditions (CC+ lessons and CC- lessons) were randomly assigned to six consecutive PE lessons involving the same sport, students, and teacher. Basketball was identified as an appropriate unit of instruction because it required relatively similar activity levels across all six class sessions and allows students to reach on average 48% MVPA in PE class (Hollis et al., 2017). As noted, the two study conditions consisted of PE lessons with CCSS ELA integration (CC+; three lessons) or PE lessons without CCSS integration (CC-; three lessons). The primary outcome measures (PA levels) data were collected during each lesson and the secondary rating scale data were collected at the end of each lesson. Before beginning each lesson,

RAs distributed the accelerometers and the students placed them around their waists. Subsequently, at the end of each lesson, the RAs gathered the accelerometers and distributed and then collected the completed surveys from the students and PE teacher. The RAs were not involved in the development or delivery of the lessons and were graduate students in the Department of Kinesiology at a college in the Northeastern United States.

Each lesson plan was devised collaboratively by the PE instructor and the researchers to ensure a clear distinction between the CC+ and CC- lessons. For the purpose of this study, a lesson that integrated the CCSS was operationalized as any ELA-related (reading, writing, listening, and speaking) task or activity that was included in the PE lesson to support the CCSS in ELA ("How Common Core," n.d.). It is important to note that mathematics integration is not a requirement for PE teachers to align to the CCSS (Seymour & Finn, 2019); this fact, along with the lack of empirical studies on CCSS ELA integration in PE, resulted in ELA integration being tested in this study. The six ELA integration tasks included in this investigation were station cards, read-alouds, bulletin boards, supplemental texts, setting goals, and creating a new activity/game. Each task was operationally defined (per "How Common Core," n.d.) to foster implementation accuracy and improve the precision of fidelity monitoring (Figure 1) during the six consecutive lessons used in the study (3 CC+ and 3 CC-). During the three CC+ days, the PE instructor integrated an ELA literacy task within each lesson. Conversely, ELA literacy tasks were excluded by the PE instructor during the three designated CC- lessons. To avoid a confound from the nature of the PE activity itself, the PE lessons all involved basketball activities. The randomly assigned lesson schedule was Lesson 1 CC-, Lesson 2 CC+, Lesson 3 CC+, Lesson 4 CC+, Lesson 5 CC-, and Lesson 6 CC-.

Overview of Data Analyses

Data analyses included examination of data integrity, descriptive statistics, inferential analyses, and calculation of effect sizes with confidence intervals. The data integrity review included examination of data accuracy, outliers, and missing data. Descriptive statistics (means and standard deviations) were calculated for each outcome measure. Inferential statistics included linear mixed models to test the effect of lesson type (CC+ vs. CC-) on PA levels. The models

included condition as a fixed effect and students as a repeated effect to account for the correlation within students across the six lessons. Student perceptions of the two lesson types (five items; CC+ vs. CC-) and ease of accelerometer use in each of the two lesson types (CC+ vs. CC-) were examined in a similar manner. Each of the six perception items was tested in a linear mixed model with a primary focus on the effect of condition. Teacher perception ratings were examined descriptively without hypothesis tests because there was a single teacher participant in the study. Intraclass correlations were calculated to estimate the consistency of student and teacher perceptions within each condition. Hypothesis tests of the primary outcomes were two tailed with alpha set to .05. Exact *p* values are reported, as well as effect sizes (Cohen's *d*) with 95% confidence intervals.

Results

Physical Activity Levels (Primary Analyses)

The two primary measures of PA, obtained from the accelerometers, were percentage of time in MVPA and steps per minute (see Table 1 for descriptive statistics). The overall mean for MVPA in the CC+ condition for all three lessons was 19.7% ($SD = 7.0$); the three-lesson mean MVPA in the CC- condition was 33.1% ($SD = 10.4$). The linear mixed model test of condition was significant, $F(1, 24) = 182.82$, $p < .001$, $d = 1.46$, 95% CI [.88, 2.14]. The overall mean for steps per minute in the CC+ condition was 20.99 ($SD = 9.46$); the mean for the CC- condition was 32.76 ($SD = 9.46$). The linear mixed model test of condition was significant, $F(1, 21) = 133.45$, $p < .001$, $d = 1.48$, 95% CI [.90, 2.15].

Student and Teacher Perceptions Survey (Secondary Analyses)

Table 2 presents the student and teacher perceptions survey results (five items assessing perceptions of aspects of the lessons and one item assessing ease of accelerometer use across the two lesson types). Linear mixed model tests of student ratings by lesson type (CC+ vs. CC-) showed no significant difference on any of the six items. Intraclass correlations of the student and teacher reports were 0.70 for the CC- items and 0.68 for the CC+ items, demonstrating general agreement between students and the teacher. The students expressed greatest agreement with the items related to enjoyment

Table 1
Descriptive Statistics for Moderate-to-Vigorous Physical Activity (MVPA) Level and Step Count by Lesson and Condition

Lesson (*n*)	Condition	MVPA% *M* (*SD*)	Steps per minute *M* (*SD*)
1 (21)	CC-	23.27 (6.80)	23.59 (4.08)
2 (20)	CC+	20.32 (6.84)	22.37 (5.19)
3 (19)	CC+	17.11 (6.34)	17.92 (4.78)
4 (21)	CC+	21.43 (7.27)	22.47 (4.85)
5 (21)	CC-	35.04 (6.10)	34.15 (6.11)
6 (20)	CC-	41.38 (8.62)	40.97 (9.68)
All lessons		26.50 (11.01)	26.97 (9.68)

Note. MVPA% = percentage of time in moderate-to-vigorous physical activity; CC- = PE lesson with no common core integration; CC+ = PE lesson with Common Core integration.

Table 2
Descriptive Statistics for Student and Teacher Perceptions of Lessons and Accelerometer Use

Item	Condition	Students (*N* = 21) *M* (*SD*)	Teacher (*N* = 1) *M* (*SD*)
Enjoyment of activity	CC-	3.97 (1.01)	3.67 (0.58)
	CC+	4.00 (1.02)	3.67 (1.15)
Physically Active ≥ 50%[a]	CC-	4.42 (0.95)	4.67 (0.58)
	CC+	4.32 (1.08)	4.00 (1.00)
Students Learned	CC-	3.36 (1.27)	3.67 (0.58)
	CC+	3.06 (1.21)	3.33 (1.15)
Physically Challenging	CC-	2.70 (1.44)	4.33 (0.58)
	CC+	2.41 (1.35)	4.00 (1.00)
Mentally Challenging	CC-	2.29 (1.29)	4.00 (1.00)
	CC+	2.23 (1.27)	4.00 (1.00)
Accelerometer Easy to Wear	CC-	4.15 (1.24)	4.67 (0.58)
	CC+	3.95 (1.30)	5.00 (0.00)

Note. CC- = PE lesson with no Common Core integration; CC+ = PE lesson with Common Core integration. Scale ratings: 5 = *strongly agree*; 4 = *agree*; 3 = *neutral*; 2 = *disagree*; 1 = *strongly disagree*.

[a]Physically Active ≥ 50% = Physically active for at least 50% of the activity.

of the activity, being physically active at least 50% of the activity, and ease of wearing the accelerometer and somewhat less agreement with items related to physical and mental challenge of the activity. The rating of the item on student learning was near the neutral, or midpoint, of the scale. The teacher ratings were similar to the students' with the exception of the mental and physical challenge ratings; the teacher provided a higher level of agreement that the lessons were mentally and physically challenging in CC+ and CC- conditions. Statistical tests of the differences between student and teacher ratings were not conducted, because comparison of a single teacher with the entire class was not appropriate.

Discussion

The purpose of this pilot study was to assess the effects of CCSS integration (ELA tasks/activities) into PE lessons on student PA rates and on student and teacher perceptions of the PE lessons. Findings indicated that integration of the CCSS tasks into the PE lessons significantly negatively affected student PA levels. Specifically, results from both of the objective primary measures (MVPA and steps per minute measured via the accelerometers) indicated significantly lower PA levels when the physical educator integrated ELA tasks (CC+) compared to lessons without CCSS integration (CC-). In fact, the magnitude of the overall differences was quite large (MVPA, $d = 1.46$; steps per minute counts, $d = 1.48$). This is an important finding that suggests that while PE teachers may have had prior success with interdisciplinary learning (James & Manson, 2015), integration of CCSS ELA tasks/activities may be detrimental to PA levels and is worthy of additional consideration (Marttinen et al., 2017). Given the pilot nature of this investigation, replication studies using objective outcomes are needed and will strengthen the knowledge base. For example, average PA levels for the teacher and the class prior to the study may reveal more about the specific effect of CC+ versus CC- lessons.

These results also raise other potential considerations. For example, if physical educators are being asked to integrate the CCSS into daily instruction, the training of PE teachers regarding best practices and implementation of ELA tasks/activities into their lessons must be more closely examined (Seymour & Finn, 2019). Specifically, professional development that provides guidance to physical educators

about how to achieve optimal student levels of MVPA while integrating the CCSS would be helpful. It may be that physical educators who are trained to integrate CCSS into PE class while mindful of maximizing PA levels could reduce potential negative effects. It is interesting to note that the recommended levels for MVPA in PE class is 50% (Centers for Disease Control and Prevention, 2010b; Society of Health and Physical Educators, 2014), yet under both conditions in this study (CC+ and CC-) MVPA levels were well below the standard. This suggests that other factors such as teacher training and lesson content may play a role in this discussion.

Another factor for consideration involves the type of CCSS integration task, as different tasks may have differential effects on PA levels. A larger investigation testing the individual effects of certain types of tasks on PA levels may yield critical information on which serve to increase or hinder PA levels. As mentioned, the literature addressing the effects of the CCSS on PE is largely prescriptive with limited objective data. This study suggested that the integration of CCSS ELA tasks/activities (at least those included in this investigation) reduced PA levels during those PE lessons.

In addition to the objective measures, this study included secondary measures (surveys) assessing student and teacher perceptions regarding different facets of the lessons and the feasibility of accelerometer use for the CC+ and CC- lessons. Results revealed no significant effect of the CCSS integration on student ratings of their lessons or in the ease of accelerometer use during the lessons compared to the non-CCSS lessons. The teacher's ratings regarding the effect of the CCSS ELA tasks/activities on PE lessons and use of the accelerometer in most cases mirrored student agreement rankings. It is interesting to note that an intraclass correlational analysis of the student and teacher reports yielded values of 0.70 for the CC- items and 0.68 for the CC+ items, demonstrating general agreement between groups. The findings from the surveys are interesting and suggest that should the CCSS initiative continue to be a requirement for physical educators, student perceptions of their PE lessons/classes may not be substantially affected. Taken together, the results from the primary and secondary measures suggest that the integration of the CCSS ELA tasks/activities may not have a negative effect on student and teacher perceptions but do appear to

have a significant and detrimental effect on PA level. This seems to have meaningful applied practice implications if PA (and potentially physical health) is a central focus and targeted outcome for PE lessons/classes. When considered from the non-CCSS perspective, the findings suggested that students' and the teacher's views of the PE lessons were not negatively affected by the significantly higher PA rates within those lessons.

A final note is warranted regarding the findings involving the feasibility of the use of accelerometers to collect PA data. As noted, results indicated that students and the teacher considered the accelerometers to be an easily used instrument to collect PA data and there was no difference in ratings when used with or without the integration of the CCSS ELA tasks/activities. This was considered a promising finding, as the accelerometers constitute an objective measure of PA that is not susceptible to the characteristic problems associated with subjective assessment of PA. As such, researchers can capture empirical data to test the effects of CCSS integration on PA, with surveys to supplement the primary physical data if desired.

Although this was the first study to objectively test the effect of CCSS ELA task/activity integration on PA levels in PE and it had many strengths (e.g., measurement of PA via an objective measure, randomization of the sequence of lessons, manualized lesson plan structure, comprehensive assessment of fidelity and monitoring for the presences of CCSS tasks/activities by RAs uninvolved with lesson delivery, statistical accounting for the effects of correlated/clustered data), several limitations warrant mention. One limitation involved the small sample size (both student participants and a single teacher), which restricts broader generalizations regarding the findings. Another limitation involved the manner in which the sequencing of the lessons may have influenced the outcomes. For example, a basketball lesson at the beginning of the unit may be more instructional than at the end of the unit. Although this is a potential limitation, the primary PA measures were adjusted to account for such differences (i.e., use of percentage of time in MVPA and steps per minute). Future studies may want to use a randomized two-group within-subjects counterbalanced design to control for potential order effects (i.e., randomization of students to one of two order groups and testing the effects of the CCSS integration

in the two groups in counterbalanced order of delivery). The study also only tested the effect of the CCSS ELA tasks/activities and as such does not provide insight into the possible effect of other CCSS content on PA levels. Relatedly, this study only examined the effects of the CCSS ELA tasks/activities during a basketball unit and it is unknown whether other PE units of instruction would be similarly affected. Given these limitations, future studies should include larger samples of students and PE teachers and test the effects of different CCSS content tasks/activities on a broader range of PE units of instruction. This will help in the determination of whether CCSS integration has uniform or differential effects on PA levels based on the CCSS content integrated and/or PE unit of instruction.

Overall, this preliminary investigation yielded important information that can be used in the expansion of this line of research. As noted, the literature review yielded no empirical studies of the effect of CCSS ELA tasks/activities integration on PE lessons and/or that included an objective measure of PA. Another point for consideration is that the CCSS policy initiative defines PE as a technical subject and suggests that PE teachers support ELA literacy. Nevertheless, the research examining the effects of CCSS integration in PE class is predominant in mathematics with nine studies that either independently or in conjunction with other subjects analyze this practice (Marttinen et al., 2017; Seymour & Finn, 2019). Given the belief that integrating mathematics in PE may be effective for students, this may be counterintuitive for physical educators (Marttinen et al., 2017; Scrabis-Fletcher, 2016; Wade, 2016).

It is clear from this study that integration of some types of CCSS ELA tasks/activities (at least those included in this study) may reduce PA during PE lessons; however, more extensive and controlled testing needs to include different types of ELA tasks/activities. Assuming the need for ongoing integration of the CCSS into PE lessons, researchers should develop and test specific ELA and/or mathematics tasks/activities that can be easily integrated into PE lessons and do not reduce PA levels. At the same time, future studies that control for teacher experience and integration tasks that sustain PA levels may reveal more about the objective effects of CCSS ELA integration in PE. This in turn may ensure that policy makers and administrators

recognize PE as contributing to the academic, as well as physical, development of students in this era of educational accountability.

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PEDAGOGY

Physical Education Teacher Education Faculty Self-Efficacy Toward Educational Technology

Kason O'Neil and Jennifer M. Krause

Abstract

The role of technology in physical education instruction has expanded greatly over the past few years. Because of the influence that physical education teacher education (PETE) faculty have on the development of teacher candidates' technology knowledge and skills, this study sought to examine the technology integration self-efficacy levels of PETE faculty. Participants included a sample of 76 PETE faculty from the United States who completed the Educator Technology Self-Efficacy Survey consisting of items related to the ISTE Standards for Teachers (Standards-T) and physical education–specific technology. Statistical analyses revealed a moderate overall rating of technology self-efficacy (M = 3.7, SD = 0.63), with facilitating and inspiring student learning and creativity with technology being the highest rated of the Standards-T (M = 3.83, SD = .66). Faculty self-efficacy for projectors and faculty self-efficacy for pedometers were among the highest rated specific PE technologies. Findings suggest that PETE faculty are generally confident in their technology integration capabilities, which is a positive for PE teacher candidates.

Kason O'Neil is an associate professor and program coordinator, Physical Education Teacher Education, Department of Sport, Exercise, Recreation, & Kinesiology, East Tennessee State University. Jennifer M. Krause is an associate professor of Physical Education and Physical Activity Leadership, School of Sport and Exercise Science, University of Northern Colorado. Please send author correspondence to oneilkm@etsu.edu

Technology has become an integral part of the educational landscape, so much so that integration has been shown to enhance teaching and learning (Henderson, Selwyn, & Aston, 2015). This is also true in the area of physical education (PE), where the use of specific technologies, such as activity monitors, digital video, and PE-specific applications, are widely available for teachers and students and enrich PE experiences and contribute to enhanced learning opportunities (Jodoin & Robertson, 2014; Juniu, 2011; National Association for Sport and Physical Education, 2009; Sibley & McKethan, 2012). As a result, technology-specific standards have been established to guide the quality of technology integration. The International Society for Technology in Education (ISTE), whose mission is to advance teaching and learning excellence through innovative uses of technology, established standards for teachers, students, and administrators for use in all subject areas (ISTE, 2008, 2017). Specifically, the ISTE Standards for Teachers (Standards-T) state that teachers should model and apply the ISTE Standards for Students (Standards-S) while they design, implement, and assess learning experiences to engage students and improve learning, providing positive models for students, colleagues, and the community (ISTE, 2008, 2017). The Standards-T require teachers to (a) continually improve their practice through self-learning, (b) seek opportunities for leadership to support student empowerment and success with technology, (c) inspire students to positively contribute to and responsibly participate in the digital world, (d) dedicate time to collaborate with both colleagues and students to create authentic learning experiences that leverage technology, (e) design authentic learner-driven activities and environments that use digital tools and resources, (f) facilitate learning with technology to support student achievement, and (g) understand and use data to drive the instruction (ISTE, 2008, 2017).

Not only is high-quality technology incorporation recommended in K–12 settings, it has also become a requirement for teacher education programs. ISTE standards are also embedded throughout the 2013 CAEP standards (Council for the Accreditation of Educator Preparation, 2019), which provide the requirements to obtain and maintain accreditation for most teacher preparation programs in the United States. The CAEP standards state that teacher

candidates of these programs must "model and apply technology standards" and have "technology-enhanced learning opportunities" (Standard 1.5 and 2.3, respectively) that show "integration of technology in all of these domains" (Standard 3.4). Specific to PE teacher education (PETE) programming, the National Standards for Initial Physical Education Teacher Education (NSIPETE; Society of Health and Physical Educators, 2017) state that PE teachers must integrate technology for planning, implementation, instruction, management, and professionalism. Specifically, the following NSIPETE (2017) standards involve technology:

- 3.e: Plan and implement learning experiences that require students to use technology appropriately in meeting one or more short- and long-term plan objective(s).
- 4.e: Analyze motor skills and performance concepts through multiple means (e.g., visual observation, technology) in order to provide specific, congruent feedback to enhance student learning.
- 6.c: Describe strategies, including the use of technology, for the promotion and advocacy of physical education and expanded physical activity opportunities.

These accreditation and teaching governing bodies demonstrate a deliberate increased emphasis toward, and support behind, empowering both teacher and students to maximize educational experiences in a digitally connected world.

Despite the increased support for technology-enhanced learning in general education, there have been varying and inconsistent levels of technology integration self-efficacy, attitudes, and behaviors among preservice and in-service PE teachers (Gibbone, Rukavina, & Silverman, 2010; Krause, 2017; Woods, Goc Karp, Hui, & Pearlman, 2008). Additionally, despite teacher professional development opportunities (e.g., workshops, conferences, and trainings), paired with need for improved technology preparation practices (Jones, Bulger, Illg, & Wyant, 2012), many PE professionals, while genuinely attempting to integrate technology, still have to actively seek help with strategies (Krause, Franks, & Lynch, 2017).

Even with these increased efforts by governing and accrediting bodies to require technology-rich educational environments in PE, there still remains a disconnect with preservice and in-service

teachers in the value they place on technology and their self-efficacy toward technology application (Baek, Jones, Bulger, & Taliaferro, 2018; Gibbone et al., 2010; Juniu, Shonfeld, & Ganot, 2013). Many of the barriers influencing this disconnect can be rooted to the lack of socialization associated with technology applications in PE. "Teachers' pedagogical beliefs and attitudes towards teaching and learning with technology are constructed during a formative period (K–12 years), also known as the "apprenticeship socialization period" (Baek et al., 2018, p. 174). Though technology has been used in PE for the past two decades or so, it has been very much a novelty of highly motivated, tech-savvy individuals, with only a relatively recent growth in programming and requirements that use technology as a tool to enhance student learning (Juniu, 2011). As a result, many of today's in-service, and arguably many preservice, teachers did not grow up in those formative K–12 years socialized with the mastery experiences demonstrating how technology can vastly enhance learning in PE. Thus, PETE programming and in-service professional development efforts must detach from old social norms, old problems, and antiquated pedagogies and work together to find new ways to support today's learner (Robinson, 2011). Casey, Goodyear, and Armour (2017) summed this point up best by stating, "The starting point for a pedagogy of technology is a desire to do things *differently*, rather than do the same thing using 'flashy' tools and tech gizmos" (p. 15).

Much of the teacher education literature surrounding technology-infused pedagogy heavily highlights the many barriers associated with technology use in PE (Baek et al., 2018). Some of these barriers most cited by in-service and preservice physical educators include inadequate support from school administration and technical staff (Gibbone et al., 2010), budget and access to technology (Gibbone et al., 2010; Kopcha, 2012), time to implement and practice technology efficiently (Kopcha, 2012), and the internal factors (e.g., self-efficacy, attitudes, and perceptions of toward technology; Baek et al., 2018). Of specific concern, many in-service and preservice physical educators feel they have not had adequate and relevant experience and training using and implementing technology in the PE classroom (Baek et al., 2018; Gibbone et al., 2010; Juniu et al., 2013). Krause and Lynch (2018) discovered that even in PETE programs with a technologically proficient faculty, barriers such as budget,

administrative support, other faculty buy-in, and lack of access to technology-friendly field experiences existed, which led to many preservice teachers gaining less than desirable experiences with technology in their PETE programs. Additionally, they found that many in-service teachers were implementing very little technology into their teaching in field placements. This research showing perceptions of inadequate training, and lack of rich experience, should be specifically alarming for PETE professionals and faculty.

Despite challenges in PETE, research highly suggests that it is necessary for teacher preparation institutions to ensure that students have discipline-specific technology skills required for teaching, and that preparing technologically proficient educators relies on multiple components (Carroll & Morrell, 2006). Two of these components include basic instruction in educational technology and observation of technology-proficient faculty (Duran, Fossum, & Luera, 2007; Wetzel & Williams, 2004). It has been a long and widely held belief that a teacher's instruction often directly resembles the way they were taught (Lortie, 1975). In addition, classroom decisions and pedagogy are often highly guided by teachers' beliefs (Palak & Walls, 2009), which are derived from experiences they have had with technology and their college professors' use (Sadaf, Newby, & Ertmer, 2012). Scrabis-Fletcher, Juniu, and Zullo (2016) found that PETE faculty modeling of technological, pedagogical, and content knowledge (TPACK) significantly predicted TPACK among PETE students, who believed their PETE faculty delivered effective modeling of TPACK. Additionally, the PETE faculty in this study regularly modeled the use of activity monitors and presentation software. Beliefs that reflect on one's capabilities, or self-efficacy beliefs, have been shown to influence teaching behaviors (Tschannen-Moran, Hoy, & Hoy, 1998).

Bandura (1997) described perceived self-efficacy to be one's "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3) and self-efficacy has been found to have a strong relationship with behavior, motivation, and persistence (Bandura, 1986). Bandura (1997, 1986) found an individual's perception of self-efficacy to be multidimensional and consisting of (a) efficacy expectations and (b) outcome expectations. Efficacy expectation is the belief that one has the ability to successfully execute the behavior required to achieve a specific outcome,

while outcome expectancies are an individual's estimate that a given behavior will lead to certain outcomes (Bandura, 1997, 1986). He further acknowledged the two need to be differentiated because a person can believe that a particular course of action will produce desired outcomes, but if the person has self-doubt regarding his or her capability to perform the necessary skill/behavior, the individual may choose to avoid any attempt altogether (Bandura, 1997, 1986).

The beliefs that PE teachers have about their abilities to integrate technology into their teaching, therefore, may influence future implementation as expected by the standards. Self-efficacy beliefs are most in flux early in learning and tend to become fairly stable and resistant to change once set (Bandura, 1997). Since PE teachers' first exposure to educational technology comes from the observation of technology-proficient PETE faculty, it is essential that faculty model and promote the use of technology-enhancing learning environments when preparing teacher candidates (Duran et al., 2007). It is the faculty who must be the focus for changing the landscape of educational technology knowledge and skill construction and future implementation in K–12 schools.

Because of the task- and situation-specificity associated with defining characteristics of self-efficacy (Bandura, 1997, 2006), global self-efficacy instruments should be avoided and instead instruments specifically designed to assess a given construct comprehensively should be used (Bandura, 1997). Given teacher education faculty play a vital role in the exposure and education of technology-based pedagogy practices (Sadaf et al., 2012), shockingly little research has been conducted related to the self-efficacy, or even overall confidence, levels of teacher education faculty use and modeling of technology in the classroom, and this is true of PETE as well.

Thus, it becomes vital to center attention and research on PETE faculty's ability to model and implement educational technology instruction aligned with the Standards-T, as well as their self-efficacy perceptions toward following through with such technology-infused instruction. The purpose of this study was to determine the educational technology self-efficacy levels of PETE faculty and this was investigated through the following research questions: (a) What are the overall levels of educational technology self-efficacy among PETE faculty? (b) What technologies are PETE faculty most and least confident with using in their roles as faculty members?

Method

Sampling

A cross-sectional survey design was used to survey participants, who were either full faculty members of PETE programs or faculty who teach courses specific to PETE, about their self-efficacy perceptions toward instructional technology. Because there is no official publically available database of all PETE programs and faculty in the United States, the researchers used www.educationdegree.com and www.a2zcolleges.com to conduct their search. Using these two sites, they searched for all U.S. universities listed as having a licensure program in PETE. For each of the 50 states, all PETE institutions listed in the search results were recorded and organized by state and SHAPE America District affiliation. A total of 709 PETE programs represented the overall population across the United States. When separated by SHAPE America district affiliation, PETE programs numbered (a) Southern District, 324; (b) Eastern District, 109; (c) Midwest District, 144; (d) Central District, 70; (e) Northwest District, 22; and (f) Southwest District, 41.

The researchers randomly sampled 20% of PETE programs from each of the six SHAPE America districts. For each of the PETE programs in the final random sample, they collected names and e-mail addresses of PETE faculty by visiting each program/department website. When they searched the department website, only PETE faculty contact information were collected, specifically excluding faculty of related content areas (e.g., exercise science, sport management, health). The final database of all PETE faculty contact information from each of the six SHAPE America districts was used for e-mail distribution of the survey.

Participants

In the PETE programs sampled across the United States, 76 faculty members agreed to participate in the study. Of those participants responding, 40.5% were male ($n = 30$) and 59.5% were female ($n = 44$), with 88.2% of the individuals self-identifying as White/Caucasian ($n = 67$), 6.6% as Asian/Pacific Islander ($n = 5$), 1.3% as Hispanic/Latino ($n = 1$), and 2.6% as Other ($n = 2$). The participants taught in a wide distribution of states, with 35 out of the 50 states represented

in the study. The states with the highest number of participants were Tennessee (11.8%, $n = 9$) and Wisconsin (6.6%, $n = 5$), with Georgia, Michigan, New Jersey, and Texas representing 5.3% ($n = 4$). The mean age of PETE faculty was 47 years of age ($SD = 11.43$) with a minimum age of 31 and a maximum of 80. Participants reported an average number of years as PETE faculty member of 14.28 years ($SD = 10.6$). Finally, participants reported their institutional faculty rank. Results showed that 30.3% were full professors ($n = 23$), 27.6% were associate professors ($n = 21$), 27.6% were assistant professors ($n = 21$), 2.6% were clinical assistant professors ($n = 2$), and 11.8% were instructors ($n = 9$).

Instrument

The survey instrument used for this study was a modified version of the validated and reliable Educator Technology Self-Efficacy Survey (ETS-ES; Gentry, Baker, Thomas, Whitfield, & Garcia, 2014; see Table 3). The Gentry et al. (2014) instrument was designed to seek classroom teachers' level of self-efficacy toward modeling and implementing 21st century technology skills in the classroom. This instrument was created to align with the Standards-T (ISTE, 2008). The ETS-ES included survey items that addressed the following five standards of the Standards-T: (1) facilitating and inspiring student learning and creativity (with technology), (2) design and develop digital-age learning experiences and assessments, (3) model digital-age work and learning, (4) promote and model digital citizenship and responsibility, and (5) engage in professional growth and leadership (ISTE, 2008). The Cronbach's alpha of the original survey was 0.958.

Because the original ETS-ES was quite large, with 10 items associated with each of the five standards (50 items total), the researchers chose to only use six items from each standard, eliminating the four items for each standard with the lowest factor loadings to address potential survey participant fatigue for redundant items relating to the same construct (Gentry et al., 2014; Hinkin, 1995). The modified survey maintained a high level of overall internal consistency, with a Cronbach's alpha of .955. The ETS-ES items were both positively and negatively worded and asked participants to rate their level of

agreement with each statement (1–5 scale, *strongly disagree–strongly agree*).

In addition to ETS-ES items, the researchers chose to add an additional section to the end of the survey in this study. These new items listed specific educational technology tools (e.g., heart rate monitors, handheld devices, classroom management software, interactive whiteboards) and asked faculty to rate their self-efficacy toward implementing and modeling each tool in a PETE classroom setting. For this section, survey participants responded with their level of agreement (1–5 scale, *strongly disagree–strongly agree*) associated with the statement (repeated for each technology tool) "I am confident in my ability to use the following technology in my role as a PETE faculty member." The final survey consisted of 30 items from the ETS-ES and an additional 17 items for specific forms of technology.

Procedure

All procedures were approved by the researchers' respective institutional review boards. The final 47-item survey instrument was then sent to a random sample of PETE faculty representing all six SHAPE America districts via an e-mail soliciting their voluntary participation in the survey. Upon informed consent, PETE faculty were given a SurveyMonkey link where they could take the survey.

Data Analysis

All survey responses were transferred to SPSS 23 for data transformation and analysis. Prior to statistical analyses, all items from the ETS-ES that were negatively worded were reverse coded into new variables in SPSS. Data analyses sought to explore (a) overall self-efficacy scores toward technology instruction; (b) overall self-efficacy scores specific to each Standards-T construct; (c) potential statistical differences in overall self-efficacy scores based on the variables of faculty rank, gender, and number of years of PETE instruction; and (d) self-efficacy perceptions based on specific technology platforms. Results were completed via descriptive analyses, ANOVA, regression, independent *t* test, and correlation, as appropriate.

Results

Participant Demographics

Specific to PETE programs, faculty members reported that the approximate average number of undergraduate PETE students graduating from their programs over the past 5 years ranged from 1 to 125 graduates, with a mean of 21.25 (*SD* = 25) per year. The courses that faculty most reported having taught over the past year included elementary PE methods (43.4%), secondary PE methods (47.4%), and measurement and evaluation of PE (44.7%), and the least reported included dance/movement education (9.2%), educational technology (6.6%), and outdoor education (5.3%).

Educator Technology Self-Efficacy Survey (ETS-ES) Scores

The overall mean self-efficacy of ETS-ES items for all participants was 3.7 (1–5 scale; *SD* = 0.63). Items from each of the five Standards-T were examined for all participants. The highest mean was associated with the standard of *facilitating and inspiring student learning and creativity with technology* (*M* = 3.83, *SD* = .66) and the lowest mean with standard of *engaging in professional growth and leadership* (*M* = 3.56, *SD* = .74; Table 1).

Table 1
Descriptive Statistics for Each of the Standards-T Based on Total Population Self-Efficacy Scores (1 = low self-efficacy, 5 = high self-efficacy)

	Self-efficacy score	
Standard	***M***	**SD**
1. Facilitate and inspire student learning and creativity in technology	3.84	.66
2. Design and develop digital-age learning experiences and assessments	3.71	.74
3. Model digital-age work and learning	3.80	.70
4. Promote and model digital-age citizenship and responsibility	3.73	.66
5. Engage in professional growth and leadership	3.56	.74

A one-way analysis of variance (ANOVA) compared the statistical differences of overall technology self-efficacy based on faculty rank. The ANOVA analysis found a nonsignificant difference in self-efficacy scores compared to faculty rank, $F(5, 70) = 2.25$, $p = .058$. A follow-up Tukey HSD confirmed these results ($ps > .05$): instructors ($M = 3.17$, $SD = .73$), assistant professors ($M = 3.90$, $SD = .50$), clinical assistant professors ($M = 4.0$, $SD = 0$), associate professors ($M = 3.6$, $SD = .77$), and full professors ($M = 3.85$, $SD = .46$).

Correlations were examined between the variables of faculty rank and years as a PETE faculty compared to overall self-efficacy. A nonsignificant correlation was found between faculty rank and overall self-efficacy ($r = .18$, $p = .12$) and between years as a PETE faculty member and overall self-efficacy ($r = -.16$, $p = .17$). A simple linear regression was also calculated for the degree to which age and years as a PETE faculty have an effect on overall technology self-efficacy. Both variables were found to be nonsignificant in their ability to predict overall self-efficacy, age: $F(1, 74) = 3.38$, $p = .70$, $R^2 = .044$; years as PETE faculty, $F(2, 73) = 1.72$, $p = .18$, $R^2 = .045$.

Finally, an independent samples t test showed that no statistical difference in overall self-efficacy scores between males ($n = 30$, $M = 3.8$) and females ($n = 44$, $M = 3.7$), $t = .42$, $p = .68$.

Self-Efficacy Toward Specific Educational Technology

In addition to the data collected from the ETS-ES, the survey asked PETE faculty to rate their perceived self-efficacy toward a list of 16 educational technology tools (1 = *low self-efficacy*, 5 = *high self-efficacy*). PETE faculty reported that their highest self-efficacy was associated with LCD projectors ($M = 4.57$, $SD = .57$), pedometers ($M = 4.51$, $SD = .57$), and laptop mobile stations ($M = 4.49$, $SD = .68$). Faculty reported the lowest self-efficacy toward interactive whiteboards ($M = 3.53$, $SD = 1.13$), classroom management software ($M = 3.55$, $SD = 1.06$), and accelerometers ($M = 3.64$, $SD = 1.2$; Table 2).

Table 2
PETE Self-Efficacy Toward Specific Educational Technology

Technology	*M*	*SD*
LCD Projectors	4.57	0.574
Pedometers	4.51	0.577
Laptop Mobile Stations	4.49	0.683
Online Professional Journals	4.43	0.789
Electronic Rubrics	4.43	0.789
Online Classroom Software	4.38	0.879
Handheld Devices	4.36	0.687
Digital Photo	4.33	0.823
Digital Video	4.31	0.805
Heart Rate Monitors	4.22	0.759
Aerobic Equipment	4.22	0.759
Wireless Microphones	4.2	0.895
Fitnessgram/Activitygram	4.08	0.99
Accelerometers	3.64	1.197
Classroom Management Software	3.55	1.063
Interactive Whiteboards	3.53	1.131

Table 3
Survey Items Adapted From ETS-ES and in Alignment With Standards-T Categories

Survey item	ISTE Standards-T category
1. I empower my students to demonstrate their creative thinking by using digital tools to generate new ideas and develop innovative products and processes.	Facilitate and Inspire Student Learning
2. I am able to develop technology-enriched learning environments that enable all students to pursue individual curiosities in an active setting.	
3. I regularly involve my students in activities where they use digital tools to plan and manage projects focused on real-life events and problems.	
4. I am unsure of how to set up a classroom where students can express themselves using technology.	
5. I find it difficult to model collaborative learning for my students.	
6. I find it challenging to help my students find and use digital tools to solve real-world problems.	

Table 3 (cont.)

Survey item		ISTE Standards-T category
7.	I am confident in customizing and personalizing learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources.	Design and Develop Digital-Age Learning Experiences and Assessments
8.	I feel overwhelmed when asked to integrate digital tools to promote student learning and creativity.	
9.	I train my students to use digital tools to independently manage their own learning objectives, plan their learning strategies, and assess their own progress and results.	
10.	I feel challenged and overwhelmed when I try to incorporate digital tools to personalize learning activities.	
11.	I am confident in my ability to design authentic learning experiences that incorporate contemporary tools and resources.	
12.	I am unsure of how I can use digital tools and resources to design authentic learning experiences for my students.	
13.	I would describe myself as an innovative educator.	Model Digital-Age Work and Learning
14.	My prior learning has prepared me to use digital tools to collaborate with students, colleagues, and parents.	
15.	My lack of technology skills may hinder my ability to acquire and keep pace with new technological advances in the future.	
16.	I feel as though I lack the knowledge and skills I need to teach in our global and digital society.	
17.	I feel confident in my ability to effectively communicate relevant information to students, parents, and peers using a variety of digital-age media.	
18.	I feel like it's a struggle to use digital tools to communicate and collaborate with colleagues, parents, students, and members of the community to support learning in my classroom.	
19.	I rarely use digital communication tools for my students to interact with other students for online discussions and project teamwork.	Promote and Model Digital Citizenship and Responsibility
20.	I struggle to provide equitable access to digital tools, curriculum, and online resources.	
21.	I frequently model digital etiquette (netiquette) and online social interaction responsibilities.	
22.	I am continually considering and addressing different student needs, including access to software, hardware, curriculum, and online resources.	
23.	I do not fully understand the local and global societal issues and responsibilities in our evolving digital culture.	
24.	I actively promote, model, and teach the safe, legal, and ethical use of online information, including author's rights, copyright issues, privacy, cyber-bullying, and securing data.	

Table 3 (cont.)

Survey item	ISTE Standards-T category
25. I have been described as a good role model for infusing technology into teaching.	Engage in Professional Growth and Leadership
26. I consistently engage in professional development that enables me to be confident in demonstrating effective use of digital tools in my classroom.	
27. I don't always keep up with trends in the research for practical effectiveness of current and emerging digital tools for teaching and learning.	
28. I struggle to join or maintain any informal learning communities/networks for learning new digital tools for teaching and learning.	
29. I rarely discuss educational technology tools and resources with my colleagues.	
30. I demonstrate and discuss with my colleagues the effective use of digital resources to improve student learning and the profession of teaching.	

Discussion

This study examined PETE faculty self-efficacy perceptions toward the use of educational technology that aids instruction. Participants were surveyed via a modified version of the ETS-ES (Gentry et al., 2014) survey instrument that was derived from the ISTE (2008, 2017) technology standards for teachers. In general, participating PETE faculty members perceived themselves as having high overall self-efficacy toward technology instruction. These ratings are inconsistent with the varying levels of self-efficacy, attitude, and behavior measures among pre- and in-service teachers, which are all related attributes (Gibbone et al., 2010; Krause, 2017; Woods et al., 2008). This could be due to the increased reduction in barriers (e.g., cost of technology, increased training) to educational technology over time, as well as access to technology for higher education faculty compared to access in public schools or for teacher candidates. In addition to the overall high self-efficacy perceptions, there was nonsignificant variability in scores that were statistically analyzed by faculty rank, years as a PETE faculty member, or gender. These results show that PETE faculty not only feel confident in the use of technology-infused education but also will model and promote the use of technology-enhancing learning environments, as

recommended by the ISTE standards. Unless people feel that their actions can produce positive or influential results based on the outcomes they desire, they will have very little incentive to attempt or pursue action in facing those difficulties (Bandura, 1997). Thus, this high self-efficacy will lead to higher possibility of perseverance in challenging situations in the future and therefore a higher integration of technology in PETE.

In addition to the ETS-ES self-efficacy data, this study asked PETE faculty to rate their perceived self-efficacy toward specific forms of technology. As expected, faculty rated themselves high on technology platforms that are typical to many PETE classrooms (projectors, pedometers, laptop mobile stations) and moderate on less typical platforms (interactive whiteboards, classroom management software, and accelerometers). Jones et al. (2012) found that both the highly and moderately rated technologies had a positive effect and were feasible within PETE, which compares similarly to the technology ratings in this study. While the faculty in this study rated themselves as moderate-to-high in terms of technology integration self-efficacy, it is not to say that all PETE faculty are in the same position. A possible limitation of this study is that faculty who are confident and interested in technology were more willing to participate in this study and those who are not may have passed on the survey invitation. Another inherent limitation of this study is the nature of being a self-reporting measure. Many researchers are skeptical about self-report results that come from questionnaires that ask participants to report on their own perceptions (Feltz, Short, & Sullivan, 2008). However, Bandura (1982) argued that in situations that participants do not have reason to distort their responses, self-reporting can be an accurate representation of cognitions. Thus, self-efficacy is best measured when evaluation apprehension has been minimized and participants are asked to respond in private (Feltz et al., 2008)

Suggestions on ways to improve educational technology in PETE include programmatic integration of educational technology throughout PETE courses, maintaining high expectations for educational technology integration in coursework, and having educational technology faculty or experts coteach or codevelop courses with teacher education faculty, which would expand the much needed faculty technological modeling (Hughes, Liu, & Lim, 2016). The

inclusion of an educational technology faculty/expert's assistance may provide an avenue for PETE faculty to increase self-efficacy through the vicarious experience or social persuasion of the expert (Bandura, 1997).

This study provided insight into the status of educational technology self-efficacy among PETE faculty. It is theorized that self-efficacy can influence behavior (Bandura, 1997), and therefore, one would assume that the faculty in this study would be actively integrating technology into their roles as faculty members. This, however, is unknown, and therefore, future research should investigate the educational technology integration behaviors of PETE faculty and possible strategies for and barriers to success. Additionally, an investigation of the sources of self-efficacy among PETE faculty could help determine what experiences (i.e., mastery, vicarious, social persuasion, etc.; Bandura, 1997) may influence self-efficacy and then allow PETE faculty and doctoral students to capitalize on those experiences.

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PEDAGOGY

Exploring the Relationship Between Self-Determination Theory and Physical Education Teachers Meeting Recommended Weekly Physical Education Minutes

James W. Ball, Kimberly A. Maljak, Matthew R. Bice, Julia Valley, Thomas Parry

Abstract

Physical activity (PA) continues to decrease and obesity rates continue to rise among children and adolescents. Researchers, along with other organizations, have recommended schools to be ideal venues to help increase overall childhood PA. However, research reports K–12 physical education (PE) is not required in the majority of states and most students do not achieve the recommended amount of weekly PE minutes. This can have a devastating effect on not only the students but also the teachers. PE teachers need to have competence, autonomy, relatedness, support, and resources available to teach an effective PE curriculum. The primary purpose of this study was to investigate if schools are meeting recommended total weekly PE minutes and the effect of meeting recommended total weekly PE minutes on PE teachers'

James W. Ball is chair, Department of Health Sciences and Physical Education, Northeastern Illinois University. Kimberly A. Maljak is an assistant professor, PE program facilitator, and assessment coordinator, Department of Health Sciences and Physical Education, Northeastern Illinois University. Matthew R. Bice is an associate professor of Exercise Science and associate dean of Graduate Studies, Kinesiology and Sport Sciences Department, University of Nebraska Kearney. Julia Valley is an assistant professor and PE assessment coordinator, Department of Health Sciences and Physical Education, Northeastern Illinois University. Thomas Parry is an assistant professor, Department of Health and Human Performance, College of Charleston. Please send author correspondence to j-ball@neiu.edu

autonomy, competence, and relatedness. In this study, the majority of PE teachers worked in schools that met the recommended weekly PE minutes, but teachers who worked in schools that did not meet the recommended weekly PE minutes felt that there was a lack of resources at their schools and felt they were less competent in their abilities to implement effective PE courses. If teachers are not given the proper amount of time or resources to teach the necessary content, then they will not believe they are competent to teach a course that is effective.

According to the Centers for Disease Control and Prevention (CDC, 2017), childhood obesity has more than tripled in youth ages 6-19 since the 1970s. Additionally, the U.S. Department of Health and Human Services (2012) found among youth ages 6 to 19, almost 33% are considered to be overweight or obese and approximately 18% are considered obese. A key factor in rising obesity rates among youth is lack of daily physical activity (PA; National Institutes of Health, 2015; National Physical Activity Plan [NPAP], 2016). Children need accessibility to safe routes for walking and bicycling to school, green spaces or community centers to play in, and a variety of extracurricular activities such as sport, dance, or fitness programs to be active, but in some cities accessibility to these necessities can be limited (Let's Move, 2014). Furthermore, by the time children become adolescents, they experience greater decline in PA and begin to live a more sedentary lifestyle. According to the NPAP (2016), only 26.1% of school-aged children participate in the recommended 60 min/day of PA. Additionally, only about 50% of adolescents attend a minimum of one physical education (PE) class weekly and attendance drops significantly from elementary into the high school years (NPAP, 2016).

Physical Education Requirements in Schools

While PA continues to decrease and obesity rates continue to rise, researchers and other organizations have recommended schools to be ideal venues to help increase overall childhood PA (Institute of Medicine, 2013; Pate et al., 2006). According to the Institute of Medicine (2013), "…because children and adolescents spend so many hours at school, school-related physical activity must be a large contributor to overall physical activity among youth" (p. 1). Within the school environment, students can benefit from classroom lessons

that include PA breaks; PA programs offered before, during, and after school; organized sports or intramurals programs; active recess for elementary students; or active transport to and from school (CDC, 2013; Pate et al., 2006). Many organizations highlight adopting or creating programs similar to a Comprehensive School Physical Activity Program (CSPAP; CDC, 2014). Programs like CSPAP encourage PA throughout the school day through five distinct components including quality PE, PA during school, PA before and after school, staff involvement, and family and community engagement (NPAP, 2016). A commonality among these organizations regarding PA in schools is they all emphasize quality PE as the centerpiece for increasing PA among students.

However, according to *Shape of the Nation Report* (SHAPE America, American Heart Association, & Voices for Healthy Kids, 2016), findings for PE requirements indicate school-aged children and youth are not necessarily receiving adequate time in PE. Furthermore, most states require participation in PE in Grades K–12, but most states also allow waivers, exemptions, and substitutions from participation in PE. On average, approximately 37.3% of states meet the recommended 150 min/week of PE at the elementary level and approximately 20.7% the recommended 225 min/week in middle/junior high and high school.

A plausible solution to rising obesity rates would be for schools to offer quality PE during the school day when teachers have direct access to students. Many benefits can be gained from a quality PE program that increases students' moderate-to-vigorous PA (MVPA) levels and provides cardiovascular endurance, muscular strength and endurance, and flexibility and bone-strengthening exercises to improve students' overall health. According to SHAPE America (2016), the goal of PE, as defined by the standards, is to "develop physically literate individuals who have the knowledge, skills and confidence to enjoy a lifetime of healthful physical activity" (p. 1). To effectively provide these skills for students, PE teachers must have a range of knowledge; the autonomy to implement a diverse curriculum, the competency to provide a variety of activities such as individual and team sports, adventure, dance, and fitness education; and the support of administration, staff, parents, and students.

PE Teachers and Self Determination Theory

According to Ryan and Deci (2000, 2002), self-determination theory (SDT) emphasizes that three psychological needs facilitate growth, social development, and well-being in people. Deci and Ryan (2000) stated, ". . . according to SDT, a critical issue in the effects of goal pursuit and attainment concerns the degree to which people are able to satisfy their basic psychological needs as they pursue and attain their valued outcomes" (p. 227). These three needs are autonomy (i.e., the need to self-direct one's behavior), competence (i.e., the need to engage effectively in one's environment), and relatedness (i.e., the need to feel a sense of connectedness to other people; Deci & Ryan, 2000, 2002). According to the Deci and Ryan, autonomy and perceived competence are important for motivation and psychological well-being. Past research has found that relatedness is less central to intrinsic motivation, serving as a distal support that aids in the increase of overall motivation (Deci & Ryan, 2000). Teachers whose three basic needs are met in the work environment are more likely to be motivated to reach the goals they have set for their classroom and more likely to provide quality instruction to all students.

According to Skaalvik and Skaalvik (2014), those who feel a sense of perceived autonomy in teaching feel they have the ability to choose goals, pedagogical strategies, and desired curriculum, which allows for freedom and integration based on their educational beliefs and values. Research has suggested teacher autonomy is positively related to job satisfaction (Skaalvik & Skaalvik, 2014). Unfortunately, when PE teachers are not working in autonomous environments, the end results can lead to burnout, emotional exhaustion, depersonalization, or feelings of reduced accomplishment (Skaalvik & Skaalvik, 2014). Likewise, PE teachers who are "confronted with performance evaluations which are contingent on student performance" (Bartholomew, Ntoumanis, Cuevas, & Lonsdale, 2014, p. 105) might question their abilities in the subject area, which leaves them feeling less competent. These evaluations occur often in PE, leaving teachers questioning their curriculum and delivery of content.

According to Ernst, Corbin, Beighle, and Pangrazi (2006), fitness scores, such as Fitnessgram, should not be used in the evaluation of teacher effectiveness or overall quality of the PE program. Evaluating teachers on overall student performance does not

allow administration to observe other areas taught such as skill development, social skills, or positive attitudes on lifetime fitness or PA. When teachers work in supportive environments that include the proper curriculum elements, they are more likely to feel confident and motivated to implement effective courses (Daniels, 2017). Research has confirmed the need for a certain amount of weekly PE minutes and shown the effect of SDT on PE teachers' motivation. However, limited research has investigated whether schools are meeting the recommended minutes and the effect of this on PE teachers' motivation. Guided by SDT, this study investigated whether schools are meeting recommended total weekly PE minutes and the effect of meeting recommended total weekly PE minutes on PE teachers' autonomy, competence, and relatedness.

Method

A Midwestern university's institutional review board approved the research study. Data were collected via a questionnaire administered at a Midwestern state conference for PE teachers. After survey administration, surveys were recorded and analyzed in SPSS 20. Only the research team had access to the electronic file that stored survey responses.

Participants

Study participants (n = 148) included elementary, middle, and high school PE teachers. At a 2016 state conference, PE teachers were approached and asked if they would like to participate in a study. If they said yes, they read and signed the informed consent. Participants then completed the survey either on paper or on SurveyMonkey on an iPad. Participants answered questions concerning their (a) demographics, (b) meeting the total recommended weekly minutes of PE per week, (c) and the need satisfaction at work scale. Participants were encouraged to answer each question accurately before submitting survey responses electronically.

Measurement of Need Satisfaction at Work

The Basic Psychological Needs at Work Scale (BPNWS) was developed by Brien et al. (2012). The BPNWS assesses basic psychological need satisfaction based on the SDT (Deci & Ryan, 1985, 2002). The BPNWS consists of 18 items (6 competence items;

6 autonomy items; 6 relatedness items). Cronbach's alpha values showed high internal consistency estimates among all three BPNWS scales ($\alpha > 0.90$; Brien et al., 2012). Questions were modified to be specific to PE teachers and here are a few examples: I feel like I determine how I teach physical education skills to the students, I feel like I have a good relationship with the teachers I work with, I feel like I determine how I assess student skills, I do not feel very competent with my implementation of PE, I have been able to implement new PE skills/curriculum at my school, and people at work tell me I am good at what I do.

Data Analysis

Descriptive statistics were analyzed among study participants (PE teachers) including gender, age, teaching experience, community type, and frequency of teachers meeting the recommended weekly PE minutes. Each of the five measured constructs (autonomy, competence, relatedness, support, and resources) were analyzed to determine group differences among teachers meeting PE minute recommendations and those not meeting PE minute recommendations. A regression analysis showed the combined effect of the measurable constructs (autonomy, competence, relatedness, support, and resources) on the outcome of interest (PE teacher meeting minute recommendations), as well as which construct(s) were most influential. Significance was established at 0.05.

Results

Participants represented 42.6% females (n = 63) and 57.4% males (n = 85) from urban (n = 47), rural (n = 18), and suburban (n = 83) communities. Of the participating PE teachers, 72.8% (n = 108) met the PE recommended total weekly minutes (K–5th grade = 150 min/week, 6th–12th grade = 225 min/week). See Table 1 for demographics.

An analysis of variance measured the difference of motivational constructs (autonomy, competence, and relatedness) and teaching constructs (support and resources) among PE teachers meeting and not meeting recommended PE teaching minutes. Teachers who met the PE recommended teaching minutes reported significantly more competence compared to those not meeting the recommended PE minutes, $F(4, 148) = 15.38$, $p = 0.001$. Further, both sets of teachers

Table 1
Participant Demographics

Demographic	*n*	%
Gender		
Female	63	42.6
Male	85	57.4
Age		
20–25	5	3.4
26–30	32	21.6
31–35	40	27
36–40	25	16.9
41–45	16	10.8
46–50	12	8.1
51–55	13	8.8
56+	5	3.4
Teaching Experience		
0–5 years	47	31.8
6–10 years	32	21.6
11–15 years	28	18.9
16–20 years	16	10.8
21–25 years	11	7.4
26+ years	14	9.5
Community Type		
Urban	47	31.8
Rural	18	11.6
Suburban	83	56.5
Meet Recommended PE Teaching Time		
Yes	108	73
No	40	27

reported resources as being major barriers; however, those who did not meet the recommended PE minutes reported resources as being significantly more of an implementation barrier, $F(4, 148) = 4.85$, $p = 0.029$. See Table 2 for ANOVA data.

Table 2
ANOVA: Comparisons Among Motivation Constructs, Support, and Resources Among Teachers Meeting and Not Meeting the Recommended PE Instruction Minutes

Motivation construct	*n*	*M*	*SD*	*F*	*p*
Autonomy					
Meet Recommendations	108	10.35	2.78	1.042	0.309
Do Not Meet Recommendations	40	10.87	2.71		
Competence					
Meet Recommendations	108	10.96	2.91	15.38	0.001**
Do Not Meet Recommendations	40	13.1	3.01		
Relateded					
Meet Recommendations	108	9.7	2.94	0.65	0.421
Do Not Meet Recommendations	40	10.15	2.64		
Support					
Meet Recommendations	108	15.08	5.8	1.68	0.196
Do Not Meet Recommendations	40	16.4	4.32		
Resources					
Meet Recommendations	108	4.54	2.77	4.85	0.029*
Do Not Meet Recommendations	40	5.7	2.98		

*$p \leq 0.05$; **$p \leq 0.01$.

A regression analysis measured the influence of the five constructs (autonomy, competence, relatedness, support, and resources) on teaching experience, class size, and meeting the PE recommended teaching minutes among study participants. The total regression model was significant among teachers meeting recommended teaching minutes, explaining 15.4% of the total variance, $F(5, 148) = 5.172$, $p = 0.0001$. Standardized coefficients indicated that competence ($p = 0.01$) has a statistically significant influence on teachers meeting the recommended PE minutes. Further, constructs used in this study were found to be statistically influential among teachers based on experience, $F(5, 148) = 2.72$, $p = 0.022$, $R^2 = .087$. Standardized coefficients report competence ($\beta = -.28$, $p = 0.05$) had a significant effect on PE teachers. See Table 3 for regression data.

Table 3

Regression Analysis Between Autonomy, Competence, Relatedness, Support, and Resources Among Teachers Meeting PE Teaching Minutes, Teaching Experience, and Class Size

Motivation construct	Meeting recommended PE minutes			Teacher experience			Class size		
	B	***SE B***	**β**	***B***	***SE B***	**β**	***B***	***SE B***	**β**
Constant	0.69	0.217		3.042	0.826		2.293	0.453	
Autonomy	−0.035	0.019	−0.218	0.117	0.071	0.199	0.09	0.039	0.285**
Competence	0.07	0.017	0.482**	−0.149	0.064	−0.282	−0.037	0.035	−0.131
Relatedness	−0.007	0.016	−0.046	0.042	0.06	0.074	−0.034	0.033	−0.112
Support	0.01	0.007	0.128	0.016	0.026	0.053	−0.012	0.014	−0.074
Resources	0.011	0.013	0.072	−0.107	0.05	−0.187	0.019	0.028	0.064
F			5.172*			2.72*			1.519
R^2			0.154			0.087			0.51
Adjusted R^2			0.124			0.055			0.017
p			0.0001			0.022			0.186

*$p \leq 0.05$; **$p \leq 0.01$.

Discussion

This study found the majority of participants worked in a school that met the recommended weekly PE minutes and teachers who work in schools that met the recommended weekly PE minutes are more competent. However, teachers who worked in schools that did not meet the recommended weekly PE minutes felt that there was a lack of resources at their schools and were less competent in their abilities to implement PE courses. For the purpose of this discussion, the resources included in this study included equipment, funding, and technology.

The state where this study took place requires PE to be taught in every grade, but it does not require schools to meet the recommended weekly PE minutes (SHAPE America et al., 2016). It has been found that school-aged youth are not necessarily receiving adequate time in PE and researchers have explained that schools can be ideal places to help increase overall childhood PA (Institute of Medicine, 2013; NPAP, 2016; Pate et al., 2006). The researchers were surprised that the majority of participants in this study worked in schools that met the recommended weekly PE minutes, since it is not required by the state. Meeting the recommended weekly PE minutes can help combat the growing rate of overweight and obesity among children, as well as make PE teachers feel more competent in their ability to teach an effective PE class.

Teachers who work at schools that do not met the recommended weekly PE minutes feel less competent. This makes sense because competence is a person's beliefs about his or her ability to teach an effective PE course. If teachers are not given the proper amount of time to teach the necessary content, they will not believe they are teaching a course that is effective. A lack of resources also contributes to a teacher's feeling of competence. If teachers do not have the proper equipment, funding, or technology, they most likely believe that their students are not getting the best lesson plan or PE course. Daniels (2017) found that teachers who have the proper elements in their curriculum are encouraged to become more effective and motivated when teaching. In PE, as well as other subjects, equipment and time are the most important elements in the curriculum to support a teacher's lesson plans. It is not surprising that participants in this study felt less competent and did not have enough resources to

implement PE if they reported working at a school that did not meet the recommended weekly PE minutes.

Deci and Ryan (2000) explained that autonomy, competence, and relatedness are important for motivation. It has been found that the more teachers' basic psychological needs are met, the more self-determined they are to provide students with adequate help and support (Taylor, Ntoumanis, & Standage, 2008). Skaalvik and Skaalvik (2014) explained the relationship with autonomy and job satisfaction in teachers. They found that PE teachers need the proper resources and time to feel competent in their job. Taylor et al. (2008) interviewed PE teachers and found that time constraints, along with other factors, affected the teacher's implementation of an effective lesson plan. Teachers might work in a school that allows them the freedom (autonomy) to develop their lessons, but they still will not feel competent in their lesson plan if they do not have the proper amount of time and resources to teach it effectively.

Limitations

This study was reliant on self-reported responses concerning recommended weekly PE minutes and participants' motivation at work. Another important limitation was location. Surveys were only distributed to participants at one Midwestern state conference. Last, potential socially desirable responses could be a limitation if a participant felt uncomfortable reporting low levels of motivation.

Conclusion

Meeting the recommended weekly PE minutes can help reduce the childhood overweight and obesity issues in the United States. It was reassuring to find that most participants in this study worked for a school that met this requirement. However, in schools that do not meet this requirement, the students and PE teachers suffer. Research has confirmed the importance of having all three basic psychological needs met in the work environment for employees to be the most effective. This study is an example of how competence is affected when PE teachers work in schools that do not meet the recommended weekly PE minutes. Teachers who feel they do not have the proper amount of time or resources necessary to teach an effective PE class could potentially lose the motivation to implement an effective PE class.

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PEDAGOGY

Cultural Competence of Urban Middle School Physical Education Teachers

Sara B. Flory and Rebecca A. Wylie

Abstract

Much literature cites how cultural clashes among teachers and students can undermine educational processes and cause feelings of mistrust among students in school settings. This research examined the cultural competence of secondary PE teachers who taught in diverse urban schools. The research questions guiding the study were (1) what do urban teachers know about students and the community they serve? (2) what instances of cultural distance exist between teachers and students in these schools? and (3) how do teachers bridge cultural distance between themselves and their students? Using qualitative research methods, we examined the cultural competence of six purposively sampled PE teachers in an urban school district over one school year. Participants were recruited based on recommendations from the PE supervisor in a large metropolitan school district in the Southeastern United States. Data collection included multiple interviews (n = 36), teaching observations and field notes (n = 18), and teaching workshops (n = 4).

With the inception of schools in the United States, students who did not encompass a traditional "White Christian" culture have faced numerous obstacles to gain the opportunity for quality and equal education. With the passage of the Civil Rights Act of 1964,

Sara B. Flory is an associate professor of Physical Education, College of Education, University of South Florida. Rebecca A. Wylie is a doctoral student, College of Education, University of South Florida. Please send author correspondence to sbflory@usf.edu

the days of "separate but equal" were no more. The desegregation of schools led to teachers who as a majority were White women facing for the first time a diverse classroom.

The issue of how best to teach students from diverse cultures is still pertinent in teacher education preparation programs and within schools. According to recent national statistics, about 80% of the teaching force is White and 77% of teachers are women (Loewus, 2017). Despite the differences in race, gender, and religion, the responsibility of every teacher remains the same: providing every student the opportunity to learn (Ladson-Billings, 2016).

Ladson-Billings (1995) created a culturally relevant pedagogy (CRP) framework with the aim to address "pervasive gaps in the educational experiences" (Allen, Hancock, Starker-Glass, & Lewis, 2017) of minority students. Teachers who embody CRP understand their students come from various cultures and thus teachers understand the value of allowing students to share their culture and of assisting students with making sense of the world around them (Ladson-Billings, 2016). Most U.S. teachers come from middle-class backgrounds and attended schools grounded in cultural "normalcy." These teachers are likely to encounter students who are ethnically, culturally, and socioeconomically different than themselves, especially if they teach in urban communities. Therefore, it seems likely that teachers may encounter students who are culturally different, or will experience a cultural disconnect once they complete their teacher education program (Harrison, Carson & Burden, 2010; McCaughtry, Barnard, Martin, Shen, & Kulinna, 2006). Research on the cultural competency of teachers in urban schools is warranted.

This research examined the cultural competence of secondary PE teachers who taught in diverse urban schools. The research questions guiding the study were (1) what do urban teachers know about students and the community they serve? (2) what instances of cultural distance exist between teachers and students in these schools? and (3) how do teachers bridge cultural distance between themselves and their students?

The cultural clash among teachers and students can undermine educational processes (Chen, 1999; Ladson-Billings, 2000). Differences in teacher and student values may cause feelings of mistrust among students (Irving & Hudley, 2008). Many urban

PE teachers shared that students are often disinterested, resistant, and disruptive (Chen, 1998, 1999; Ennis, 1995; Ennis & McCauley, 2002). If teacher values or content selection does not align with students' cultural viewpoints, students are likely to disengage altogether (Ennis, 1995). McCaughtry et al. (2006) reported that urban PE teachers struggle with providing culturally relevant PE activities; therefore, urban PE teachers may inadvertently create environments in which urban youth are disinterested in PE and miss important opportunities for physical activity because students may not find meaning or value in the activities their teachers choose. Being a culturally competent PE teacher is a dynamic process that changes depending on the teacher, school, and population being served. The theory framing this research, Flory and McCaughtry's (2011) culturally relevant physical education (CRPE) includes three steps for providing culturally relevant instruction.

Many frameworks explain the role of culture in education (i.e., cultural discontinuity, cultural responsiveness, etc.; Banks, 1993; Gay, 2010; Irvine, 2003; Ladson-Billings, 1995). These frameworks cannot operate without sophisticated knowledge of the public served. The first step of CRPE is to connect with students and provide culturally relevant schooling. To do this, teachers must deeply know students, including ethnic, linguistic, and socioeconomic backgrounds; learning styles; challenges; and personal information providing greater insight into students' out-of-school circumstances.

The second step of CRPE involves identifying cultural distance—discrepancies between worldviews and values—between teachers' personal biographies and the realities of their students. Vast cultural distance often exists between schools, teachers' biographies, students, and families in urban communities. Pransky and Bailey (2002) wrote, "Because all communities do not think, believe, or learn in identical ways, there may still be much . . . that is confusing to or misunderstood by children with language, culture and socioeconomic differences" (p. 371).

The third step of CRPE involves overcoming cultural distance by devising strategies that bridge cultural distance (Bondy, Ross, Gallingane, & Hambacher, 2007; Ladson-Billings, 1995). Several studies have identified successful teachers who understand historical, political, and economic factors affecting communities and view

students as family (Gay, 2010). Cochran-Smith (1995) suggested teachers "explore and reconsider their own assumptions, understand the values and practices of families and cultures that are different from their own, and construct pedagogy that takes these into account in locally appropriate and culturally sensitive ways" (p. 495). This framework offers a solid foundation for developing urban PE teachers' cultural competence, which can help improve teacher preparation programs and help teachers engage students from diverse backgrounds.

Method

We used qualitative research methods to examine the cultural competence of six PE teachers in an urban school district over one school year. Participants attended multiple workshops, were observed in their schools, and participated in multiple interviews to provide insights into their cultural competence. In this section, we outline details regarding the participants, data collection methods, and analysis.

Participants

Participants were six purposively sampled PE teachers in an urban school district. Participants were recruited based on recommendations from the PE supervisor in a large metropolitan school district in the Southeastern United States. The district is one of the top 10 largest districts in the United States. The school district encompasses over 250 schools, including 45 middle schools serving students in sixth through eighth grade. In this district, middle schools have between two and six PE teachers.

Four males and two females with two to 12 years of teaching experience participated in the project. Table 1 outlines the demographic information of the teacher participants. Beyond the recommendation of the district PE supervisor, teachers were selected based on the differing demographic makeup of the school population and the ethnicity of the teacher. Alfonso was selected to participate because the school where he taught had recently undergone a demographic shift of an increase in students from non-Hispanic populations.

Table 1
Participants

Teacher name (pseudonym)	Age	Teaching experience	Ethnicity	School name (pseudonym)	School population
Alfonso	33	4	Hispanic	Powell	78% Hispanic 15% other ethnicities
Brian	38	7	White	Whitaker	27% Asian 28% African American 16% Hispanic
David	41	12	African American	Powell	78% Hispanic 15% other ethnicities
Jason	27	4	White	Grove Park	60% African American 21% Hispanic
Kate	31	5	White	Martindale	50% African American 24% Hispanic
Rebecca	24	2	White	Valley Cove	57% African American 30% Hispanic

Data Collection

Data collection occurred in three distinct phases: pre-workshops, workshops, and post-workshops. Qualitative data collection included interviews, teaching observations, and workshops. This section discusses each element of data collection.

Interviews. Each teacher participated in multiple interviews throughout the project. All interviews followed an interview guide, were audio-recorded, and were transcribed. First, the teachers participated in an entrance interview (n = 6) during the pre-workshop phase of the project, which allowed us to build rapport with the participants and learn about the teachers' backgrounds in relation to their teacher preparation program, their teaching experiences at their school, and their teaching philosophies. These interviews lasted approximately 60 min.

Once the workshop phase began, we conducted two to three additional individual interviews with each teacher (n = 20, approximately 45 min each) related to the topics covered in workshops and observations of their lessons (discussed in Teaching Observations section). Teachers also participated in focus group interviews at the conclusion of each workshop (n = 4, 45–60 min each). Exit interviews (n = 6) occurred at the post-workshop phase of the project, allowing teachers to reflect on the project, discuss changes to their teaching practices or philosophy, and provide feedback about their participation. The exit interviews lasted between 75 and 90 min each. Overall, we conducted 36 interviews throughout the project.

All interviews were conducted by the lead researcher, who has over 10 years of qualitative research experience conducting interviews and using probing questions. Entrance interviews followed the same interview guide with probing questions to learn about the participants' educational backgrounds, teaching experience, experiences at their school, and their overall teaching philosophy. The focus group interviews were also based on an interview guide with probing questions. The purpose of the focus group interviews was to review concepts covered in the workshop, to allow the participants to discuss their experiences together, and to gain additional perspectives about the teachers' interactions with their students. Sample questions from a focus group interview following a workshop including an activity regarding the definition of culture were

"Has your definition of culture changed since the beginning of this project?" "What are some ways that you learn about your students' culture?" and "What might you change about your teaching after this workshop?" These questions allowed all of the participants to share teaching strategies or classroom routines and provided a space for the teachers to learn from one another. Individual interviews with teachers started with an interview guide based on concepts from the most recent workshop, as well as questions related to events from observations or questions related to their teaching strategies.

Teaching observations. We observed each teacher throughout the school year three times (n = 18) for at least two class periods each occasion to identify practices and interactions that bridged the cultural distance between teachers and students. Each observation lasted approximately 2 hr. The classes observed consisted of 30 to 40 middle school (sixth to eighth grade) students, which is the typical class size in the district. Observations were scheduled at the convenience of the participating teacher and the lead researcher. We took detailed field notes during each observation to note things like the strategies teachers used in classes and teachers' reactions to student behaviors. Field notes were handwritten during the observation and transcribed the same day. Observations were scheduled at the convenience of the teachers so that the researcher could observe one or two class sessions and conduct an interview (either during a prep period, a lunch period, or after school). Usually, observations occurred prior to interviews with the participating teachers and the researchers often discussed notable events from class observations during the interviews.

Workshops. Throughout the project, teachers participated in four workshops to explore components of cultural competence. For example, during a workshop related to knowing the public served, teachers participated in a Community Exploration activity to examine the demographics of students and families within their school's zoned boundaries, organizations within the area (i.e., Boys and Girls Clubs, YMCAs, faith-based organizations, well-known local businesses, etc.) that may influence students' participation in physical activity, and other noteworthy information regarding the community. Each workshop concluded with a focus group interview, which allowed the participants to share their viewpoints with one another.

Data Analysis

Data were analyzed via constant comparison and inductive analysis (Corbin & Strauss, 2008; LeCompte & Schensul, 1999). Field notes and interviews were transcribed within a day of the data collection session. Constant comparison allowed the researcher to identify relationships among the data and start to develop themes. Field notes and interview transcripts were coded each week so that interpretations of the data could be compared and the significance of the data could be determined in subsequent data collection sessions. Excerpts with similar codes were grouped together and helped us to write future interview guides.

Prolonged engagement, triangulation, and formal and informal member checking (Lincoln & Guba, 1985) helped establish trustworthiness of the data. During data collection, we conducted informal member checks to ensure that interpretations were accurate. Specifically, the individual and focus group interviews during the workshop phase of the project, as well as the exit interview during the post-workshop phase of the project, allowed ample opportunities for member-checking questions and data triangulation.

Findings

Data from teacher observations, interviews, journal responses, and survey results describe the changes in teachers' cultural competence as a result of participating in this research. Specifically, these results outline the nuances of teachers' knowledge regarding their students and their students' home communities and the influence of this knowledge on their teaching practices. The findings also highlight common instances of cultural distance between the teachers and their students, including how teachers learned to identify cultural distances between their own cultural templates and their students' lived experiences. Third, the findings identify the unique strategies these teachers use to bridge cultural distances encountered with their students and the influence of these strategies on students' engagement in PE.

For the purposes of this paper, the findings focus on the central theme of respect. Respect, although not clearly defined by our participants, was shown collectively through their desire to devise strategies that bridge cultural distances, to spend time connecting

with students, and to be consistent in their expectations of all students. By demonstrating this respect for their students, the teachers shared they could engage their students more in PE classes and they felt more effective. This section outlines the influence of demonstrating respect for students on each step of the cultural relevance cycle.

Respect and Knowledge of Students

It was apparent from the first observations of the teachers in this project that they all approached their students with a demeanor of mutual respect and had established a rapport with students that other teachers within their physical education departments or across the school did not have. None of the teachers took on an authoritarian approach in their classes. We asked the teachers about their respectful approaches to their students, and they shared that the respect they showed was purposeful, planned, and often resulted in learning more about the students and their lives outside of school. Brian understood that students in the current generation view education much differently than he may have as a middle school student, so he had to adjust his approach. He said,

> . . . things are a lot different in schools now compared to when I was in middle school. I guess that's not a bad thing, but I know the students aren't going to listen to me just because I'm the adult. You have to give some respect if you want to get any respect.

Kate shared,

> I had to figure out a way to get through to the students—I tried the dictator approach for a while, and that really backfired, especially when they didn't know me or what I was all about as a teacher. So I tried to do something that was more compatible with what I thought they needed—I had to become compatible with my students.

Alfonso discussed how he approached students in his classes, especially those who transferred in the middle of a school year. He said,

> I try to demonstrate respect right away when I get a new student. I introduce myself formally to the student—I'll

> shake their hand, look them in the eye, get their name, and ask them to pronounce it a few times if I'm unsure myself. I really try to show them they are a valued member of my class. I think that helps remind the rest of my students that I respect them, too.

To maintain the rapport and respect they had established, several teachers planned into their lessons activities that allowed them to circulate among students and have individual conversations. Rebecca spent the first five minutes of her Monday classes asking students to share a positive event that happened over the weekend, which she felt helped develop a community-like atmosphere. Jason implemented "Fitness Fridays," where students participated in their choice of activities designed to elevate their heart rates. He used this time to visit with groups of students and talk to them about how things were going in their other classes, what weekend plans they might have, or local sports teams.

All six teachers shared that they observed obvious differences in the way students interacted with them and other teachers at their school because of the respect they showed students. Jason had a reputation for being respectful of his students, which benefited him in his own classes, but outside of his classes as well. He shared, "I definitely have better rapport with my students than some of the other teachers. Even if I'm covering another teacher's class, the students get their work done and I can get them back on task quickly." Kate shared that her administration assigned her a "homeroom" section, which was unusual for the PE department teachers. She said, "None of the other PE teachers have a homeroom. But I have 14 boys who should probably be in the ninth grade by now. They work hard for me because they know I'm not going to judge them.

By purposely demonstrating respect to students in their classes, the teachers learned more about their students and their lives outside of school. David shared that once students knew that he respected them, it was like a "switch" that made his students open up to him. He said, "When they're comfortable, when they know you respect them, and you're not going to tell them to sit down and shut up, they do more for you. They'll share things that allow you to have more authentic interactions with them." Several teachers claimed that students would share things about their home lives, their families,

their extracurricular activities (e.g., sports teams or youth groups), or their hobbies. Rebecca shared, " . . . we start with these small nuggets of information, and then the students are more willing to open up about their lives or backgrounds." Brian said, "It makes it easier to connect and develop some common threads with them." He continued,

> …it doesn't seem that difficult to [show students respect], but it makes my job so much easier when I do it. Teachers that complain the most about their students are the ones willing to do the least. Maybe it's crazy that I view my students as actual human beings, as whole students, not just burdens in my gym. But when you delve into it, I'm here for them; I want to help make them great citizens. There's much more to my students than what I see for the 50 minutes they are in my gym.

The connections the teachers built with students by demonstrating respect and developing rapport with students provided a nearly endless supply of cultural knowledge that benefited several facets of teaching. As David alluded, this "flip of a switch" that occurred once mutual respect was established meant that teachers could understand their students at a deeper level and help them succeed. For example, Alfonso rarely had management issues with several students labeled as "problem students" elsewhere in the school. Alfonso shared a particular anecdote about a student who told him that his father was in jail, his brother had dropped out of school, and his mother was doing her best to make ends meet for the rest of the family, which was causing a stressful environment at home. A math teacher reached out to all of the student's teachers because she was struggling to get him to cooperate in class or turn in assignments on time. Alfonso was surprised at the e-mail, as he had never had any issues with the student. Based on their mutual respect for each other, he was able to talk to the student privately about the issues in math class and encouraged him to change his behavior; he also offered suggestions to the math teacher to help keep the student motivated and engaged. Similarly, Kate shared that she often had students stop by her gym on the way to the main office if another teacher sent them out of class. She said,

> I probably get at least one kid a week [who] comes to me before they go to the Student Affairs office if they get a referral [from another teacher]. We usually talk about what happened so they can calm down before they go see the assistant principal, and we talk about ways they can avoid getting in trouble again with that teacher. They know I'm not going to excuse their behavior, but they know I'm going to keep it real with them and listen. I guess I'm sort of an ally for them.

Brian brilliantly summed up the benefits of having cultural knowledge of students because of the respect he demonstrates toward students. He said,

> Once that connection is made, students can talk to me, and I can adjust my expectations. If you're having a terrible day because of what's going on at home, I'll do my best to make sure your day doesn't get worse. I still have high expectations for all of my students, but my job isn't to prepare professional athletes—my job is to prepare healthy human beings.

Overall, the teachers participating in this project seemed to understand that giving students respect first was key to connecting with students and providing engaging lessons. As Kate simply stated, "Honestly, just treat them like they're my own."

Respect for Students and Identifying Cultural Distance

The teachers in this study were very aware of the cultural distances between themselves and their students, but their respect for their students encouraged them to investigate more of the cultural distances between them. All of the teachers admitted being very aware of the socioeconomic differences between themselves and their students. At four of the five participating schools, over 88% of the students attending qualified for free or reduced-price lunch. Many of the teachers knew of at least one to two homeless families within the school population and reported that single-parent families or extended families raising children was the "norm" for their students. The teachers also shared the more "obvious" cultural distances between themselves and their students. Brian identified that students at his school practiced a variety of religions, noting students

would discuss the various holidays they celebrated and he would occasionally received requests to excuse students from PE during times of fasting. Alfonso taught in his classes a few Muslim girls who followed more conservative dress practices. These obvious cultural distances did not change the respectful way the teachers interacted with the students, and during interviews, several teachers identified ways that they attempted to connect even more because of the cultural distance. Referring to his Muslim students, Alfonso shared that the cultural distances frequently sparked conversations. He said,

> It's actually pretty cool—I try to ask questions and learn what I can about the students. I'm Catholic, and I'm pretty clueless about my Muslim students. I know there is a space here at the school where they can go pray. So I've asked them how often they pray during the day, and have them explain some of the holidays to me. I think they appreciate that I ask questions rather than assume or just ignore that part of their culture.

Kate learned about Three Kings Day, a holiday celebrated in early January in some Hispanic cultures, only after she conversed with some of her students. She said, "A few students seemed 'down' when we returned to school in January. They were a little jealous of the students showing off Christmas presents, but their families hadn't celebrated yet."

Following a workshop focused on understanding culture, the teachers shared their desire to move beyond the simplistic "heroes and holidays" approach to culture. During the workshop, teachers participated in activities and group discussions that helped them identify their own cultural backgrounds. Teachers were asked to identify significant world events that occurred during their school-age years; to consider their own worldviews of concepts such as time, personal space, or relationships with non-family members; to list their various identities (e.g., teacher, husband, son, father, etc.); and to consider their possible assumptions and biases. During this workshop, the teachers also considered the "iceberg model" of culture, where the observable behaviors and practices of one's culture are considered the "tip of the iceberg," or the surface culture, while the deeper elements of one's culture are considered below the surface. These deeper elements include various notions including concepts of

authority, personal space, social interaction rates, time, gender roles, as well as other core values that determine what an individual may interpret as good or bad, desirable or undesirable, or acceptable or unacceptable.

After participating in the workshop discussions and activities, several teachers expressed an increased awareness for these cultural distances. Jason said, "I know that I can't ignore the cultural differences, but now I'm aware of things that I never even considered. I'm really going to pay attention to body language and the space I give my students." Rebecca shared, "Examining my own feelings about these things [deeper cultural elements] will make me think about how I approach my students. I'll probably think twice before I just react to something a student does." Kate continued, "Maybe the way I prefer to interact with one of my students is really different than what they would prefer. I can't just assume that the way I do things is what is best for that kid."

Teachers also participated in an activity in which they explored zoning maps of their schools. Several teachers had some knowledge of the neighborhoods where their students lived, but were asked to analyze the zoning maps in terms of housing, access to fresh foods versus fast food or convenience stores, health care, green spaces, and public transportation. Respect emerged as the teachers identified the cultural distances between their own experiences and how their students navigate their daily lives. Kate said,

> Most [students] are bussed in from the east side of town, because the neighborhood school is a magnet program that you have to apply for. They're on a bus for 90 minutes each way every day. That makes for a pretty long day . . . I hear about so many fights at the school bus stops. A lot of families don't have cars, so I don't see that many parents or caregivers on conference night. And even if they do have a car, if I were in that situation, I'm not sure I would spend the gas money to come all the way here, either. Some of my kids will just use their bus pass to take the city bus home if they decide they've had enough at school, because they know all of the routes. I sort of understand the attendance issues we have at this school because of transportation.

David recognized that his students had few options for fresh food, which might influence their performance in PE. He reflected,

> . . . the corner store is the major source of food for my students. I hear them talk about it, too. They know where to buy single cigarettes, where the cashier doesn't ask for I.D., and where to trade food stamps for cash. Sure, there are a few grocery stores, but a bag of chips is cheaper than a head of lettuce, and soda is cheaper than water, so decisions are made. Are they fueling their bodies for physical activity? Probably not optimally. So it makes sense to me that some of my students get tired after jogging for 20 seconds.

Rebecca shared that encouraging students to be active outside of school might not be a feasible strategy for some of her students. She said,

> I noticed that there's not many parks in the immediate area for my students to go and play in after school, and I've seen homeless people in the one that's just down the road. So I can't just suggest that [my students] play basketball or go for a walk without being concerned about how safe that really is . . .

Jason shared that the school zone analysis helped him understand how much different his middle school experiences were than his students'. He said,

> I've driven around in the area, and students will tell me about the "bad" parts. If you think about it, some of the circumstances that my students have to deal with, they're already young adults. A lot of them take care of themselves, which wasn't the case for me at all. They can get into so much trouble in the city, especially because of the economic level. Some kids really don't care about participating or what grade they get in PE, because they're just trying to get through another week . . . and I guess I can't be mad at them for that.

Respect for Students and Strategies for Bridging Cultural Distance

The participating teachers continued to demonstrate respect for their students in the strategies they devised to bridge the cultural distances. Some of these strategies were conscious efforts related to classroom management, policies, or individual interactions. Other strategies the teachers used followed a broader philosophy and allowed students to thrive in PE classes and beyond.

A few of the teachers discussed letting students sit out from participation without any consequence for their daily grade. These teachers knew when a student's mental or emotional state meant that participating in a highly structured activity might not be best. Brian said,

> I can tell when a student is having a rough day, usually within the first few minutes of class. If that's the case, I usually try to get them aside to talk to them and find out what's going on. If there's something major affecting them, I might let them participate at a lower level, or sit out and observe, or if they need to go talk to the resource officer, that's OK too. If I look at the big picture, I need to consider the needs of that student overall, not just their physical activity. It's not the end of the world if that student doesn't play team handball that day, you know?

Jason admitted to being more lenient with some of his classroom management practices, such as having cell phones out during class or moving out of the groups he put them in for activities. He said, "I'd waste instructional time if I nagged students about everything. I give them chances to correct their behavior, and they usually get it together, but again, I'm sure it's because I respect them." Rebecca altered her dress out policy so that families did not experience an additional financial burden. She said, "I sort of gave up on requiring a uniform for PE, because I know some families can't afford that. So as long as they wear dark athletic shorts and a lighter colored shirt, I'm fine with it." Alfonso purposely avoided large-group instruction in his courses so that his students did not act out in front of their peers. He knew that many of his students wanted opportunities for

attention, because they may not get much individual attention outside of school. He shared,

> My students want to shine in front of their friends, so they'll try to embarrass others or do something to get the spotlight when we're in large groups. I get them going into activities in smaller groups and then I'll make my way around to give refinements and other instruction. I don't even give them the chance to do it, and it solves two issues. They get that special attention from me that they're craving, and my classes run smoother.

Kate shared that she "started over" with one class of students who were struggling to participate without arguing or fighting. This class was made up of students who had been "held back" at least one grade and who struggled with reading and writing. After struggling with the whole group for several weeks, she allowed the students to play small-sided games of basketball or football (which the students enjoyed playing) and called students over individually and spent one-on-one time with them. She said,

> It was a month of conversations. I asked what I could do to help them, what class do you hate the most, what class do you like the most. The students in that class needed to know they had at least one teacher looking out for them. I took notes and tried to look at the group as a whole when I was done. We treat the class as a study hall one time a week and I help them with their work from other classes. They've come so far—they were able to play a game of Ultimate Frisbee the other day with actual teams, and that was a huge step.

Some of the teachers' respect for their students guided their philosophy for teaching and all of the strategies they used in classes. For example, Brian felt that it was unrealistic for his students to blindly conform to his teaching style, and he frequently asked for student input throughout the school year. He shared, "I can't expect my students to adapt to my teaching—I need to adapt to where they're coming from. I want them to be stakeholders in their own education and success—so how do I make my teaching better for them?"

David knew that his lessons might look less structured to an outside observer, but his commitment to and respect for his students was a top priority. He said,

> We have a unique opportunity in PE to connect with kids because it's so social. I try to be as authentic with students as I can, and show them the respect I know they are craving. I treat students like they are my own kids, because I believe what you give is going to come back to you at some point. My lessons might not look like they're 'supposed to' according to the district, and maybe I'll never get that merit bonus that's based on test scores. But I invest in my students. I take time to connect with my students every day. I make my kids believe that they are capable of more than what surrounds them. I've worked with a student over the past year [who] believed it was 'in his blood' to be a criminal because every male in his immediate family was in jail. I can't just write them off, I need to understand who they really are.

Regardless of the strategies that the teachers used to bridge the cultural distances between themselves and their students, the teachers' actions stemmed from respect. Usually, these strategies were aimed at helping develop the student as a whole, rather than developing only their health or fitness or boosting a formal teaching evaluation score. After one interview, Kate reached out via text message. She wrote,

> The things I do (or try to do) for my kids are never fully conscious. My goal is to get the kids on a path to being a good person. Helping them think through thoughts before actions. To me, they don't have a value or a test score. They're a person who needs guidance or a tangible "Jiminy Cricket" in a world where adults are too busy or fed up with the ridiculous fads that kids go through. I try to do what I think is best for each kid, so even if they're driving me crazy, I always come back to "Are they kids? Are they workable? Of course they are. Let's do this."

Discussion

Teachers in urban schools encounter many issues not faced by teachers in more suburban areas. Diversity in their classes comes in the form of not only student race and ethnicity but also socioeconomic levels, languages spoken, and parental involvement. Creating an environment of not only respect but also trust may be more difficult in these diverse settings. One way teachers can establish respect with students stems from building an environment centered on cultural competence.

Research on teacher–student relationships highlights the influence of interactions on students' social, emotional, and academic experiences (Collie, Shapka, & Perry, 2011; Wilkins, 2014), as well as of these relationships on the school climate (Grayson & Alvarez, 2008). Often, student academic achievement is linked to emotional responses to teacher behavior (Phelan, Davison, & Cao, 1992; Wilkins, 2014). Specific to urban schools, Ennis and McCauley (2002) identified that students who are at risk and do not have trusting and respectful relationships with teachers may experience consequences such as failing grades, detention, and school suspension. For these students, reciprocating trust and respect may be especially difficult because of the "shields of distrust and anger developed over years of school failure and perceptions of unfair treatment" (Ennis & McCauley, 2002, p. 155).

Much of the research related to cultural relevance in physical education focuses on teacher preparation for cultural competence (Domangue & Carson, 2008) and on designing or implementing culturally relevant curriculum (Ennis, 1999; Hastie, Martin, & Buchanan, 2006). This study was unique because the participants were purposefully selected by the researchers after being identified as "highly effective" in urban schools by a district administrator and after attempting to identify and understand the components of their teaching practice that allow them to be more successful than their peers.

The connection between respect and cultural competence is incredibly strong, as one of the main tenets of establishing cultural competence is respecting cultural differences and viewpoints, rather

than expecting individuals to conform to the dominant culture's views and norms (Irvine, 2010; Ladson-Billings, 1995). The findings of this study differ from the findings of other research regarding teachers' respect in urban schools, teacher–student relationships in urban schools, and cultural relevance in PE, because the respect the teachers in this study had for their students motivated the teachers to reach students who were reportedly disengaged elsewhere in school. The six participants in this study worked hard to understand the specific cultural backgrounds and the communities their students lived in to create stronger connections in the classroom. The teachers identified that close, personal, respectful relationships with their students translated into more opportunities for student learning, better classroom management, and higher efficacy for teaching.

The limitations of this study include the small sample size and the relative inexperience of several participants. We realize that a larger sample of teachers may have yielded more insights to the ways that teachers understood the populations they taught, identified cultural distance, and implemented strategies to overcome cultural distance. The lessons learned from these teachers, however, can inform future practice in challenging school environments for improving PE experiences for all students. Future research could investigate how specific professional development aimed for improving cultural competence improves teaching practices in diverse schools, as well as explore physical education teacher education practices that encourage culturally relevant teaching upon completion.

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PEDAGOGY

An Analysis of National Physical Education Curriculum Initiatives in Brazil

Carla Vidoni and Osvaldo Luiz Ferraz

Abstract

This study examines how curriculum in physical education (PE) in Brazil has evolved in the last 20 years. Since the beginning of the 20th century, PE in the Brazilian schools has been influenced by different conceptual, political, philosophical, scientific, and pedagogical trends. The most influential trends were originated from medical field, military, sports, and pedagogical philosophies. This analysis process consists of (a) a review of the Brazilian PE historical perspective, (b) an overview of the scope of national curriculum guidelines established between 1997 and 2017, and (c) a description and reflection of the transition from national guidelines to a recently established compulsory national curriculum. The findings suggest that the evolution of PE in Brazil resulted in significant positive changes in terms of inclusiveness, cultural diversity, and the expansion of the content using the concept of culture of the body. Multiculturalism, although still a challenge, was indeed considered in the former recommended guidelines and the current compulsory curriculum document.

In December of 2017, Brazil adopted a compulsory national curriculum (Ministério da Educação [MEC], 2017). It is called National Common Basic Curriculum (aka *Base Nacional Curricular Comum*

Carla Vidoni is an associate professor, Department of Health & Sport Sciences, University of Louisville. Osvaldo Luiz Ferraz is a professor, School of Physical Education and Sport, University of Sao Paulo. Please send author correspondence to carla.vidoni@louisville.edu

[BNCC]; MEC, 2017). Physical education (PE) is one of the subjects included in the BNCC. PE is considered important in Brazil because it is the only discipline, and in some cases the only place in the community, that offers children opportunities to develop and enrich their movement experiences. According to Brazilian PE literature, the establishment of a national curriculum is critical to raise the level of education, to contribute to the democratization of knowledge, and to make schools accountable for the success and failure of students (Ferraz & Correia, 2012).

Prior to the BNCC, a set of curriculum guidelines called the National Curriculum Parameters (aka *Parametros Curriculares Nacionais* [PCN]; Brasil, 1997a) were recommended for approximately 20 years. The PCN provided teachers with suggestions of lesson objectives, content, teaching strategies, and assessments. During this period, 21 out 26 Brazilian states established their local curriculum guidelines (MEC, 2017). The main reason individual states adopted their local curriculum was because of social and cultural differences among themselves in terms of rural-urban regions, religious, immigration, and colonization background (Lopes, 2001).

The Brazilian Ministry of Education published the Brazilian Curriculum Parameters in 1997. These guidelines delineated a plethora of goals to be met in primary (i.e., first through ninth grades) and secondary (i.e., 10th through 12th grades) school levels. The PCN goals were comprehensive in a sense that schools would have autonomy to develop a curriculum plan to best address the goals according to cultural and socioeconomic needs (Brasil, 1997a). The proposition of the PCN was to ensure that all students in the nation had the same opportunities to receive basic content knowledge, independently of the region where the schools are located.

The PCN documents, in general, were structured in 10 themes. The introductory theme consisted of (a) history and purpose of the curriculum, (b) explanation of elaboration process, (c) information about students and teachers, and (d) trends of pedagogical practices. Subsequent themes involved disciplines such as Portuguese (i.e., Brazilian national language), mathematics, natural sciences, history and geography, arts, and PE. There was also the inclusion of transversal themes. Transversal themes referred to life topics that would go beyond a specific subject matter and should be integrated

across disciplines. The transversal themes were related to (a) ethics, (b) environment and health, and (c) cultural plurality and sexual orientation (Brasil, 1997a, 1998a).

The PCN in PE was based on the concept called the "*culture of the body*." Culture of the body refers to the combination of biological and cultural dimensions, rather than merely physiological, anatomical, and biomechanical standpoints that used to be part of the traditional PE trends (Ferraz & Correia, 2012). The focus of the *culture of the body* is to provide students with knowledge and skills in a variety of games, sports, dances, martial arts, and gymnastics that can positively influence individuals' health, leisure, sport performance, communication of ideas, feelings, and emotions (Brasil, 1997b, 1998b). Similar to the concept of physical literacy (Whitehead, 2010), *culture of the body* embraces the development of the whole individual. Nonetheless, the concept of *culture of the body* was part of the PE curriculum evolution in Brazil.

This study intends to contribute to the international PE curriculum literature by analyzing the evolution of the Brazilian curriculum including its multicultural perspective. The analysis of this evolution process includes (a) a review of the Brazilian PE historical perspective, (b) an overview of the scope of PCN in PE, (c) a description and reflection of the transition from national guidelines (i.e., PCN) to a compulsory national curriculum (i.e., BNCC).

Brazilian Physical Education From a Historical Perspective

Since the beginning of the 20th century, PE in the Brazilian schools has been influenced by different conceptual, political, philosophical, scientific, and pedagogical trends. The most influential trends that will be described were originated from the medical field, military, sports, and a pedagogical model called New School (Betti, 1991; Darido, 2003). During the 1920s and 1930s, the medical class assumed a hygienist perspective, which was concerned with the betterment of health habits of the general population. During this period, PE was geared toward nurturing healthy bodies to be less susceptible to diseases. PE also took the responsibility to produce high productive workers during industrialization and urbanization periods. Similar to other nations, military organizations in

Brazil played an important role in emphasizing the importance of healthy and physically fit recruits. Following the Western world trends, German and Swedish gymnastics also became popular in the Brazilian PE curriculum in the mid-20th century (Betti, 1991; Darido, 2003; Siedentop & van der Mars, 2012).

The teaching of sports as a main content in PE curriculum started in the 1970s. During this period, sport became an important and well-recognized practice due to the inclusion of (a) physical fitness as a health component, (b) technique as a skill development component, and (c) cooperation and perseverance as a social component (Betti, 1991). Consequently, German and Swedish gymnastics lost importance in PE. The influence of sport in PE became a significant political aspect in the nation as part of military dictatorship government. This political vision exploited sport as a possibility to increase nationalism and to demobilize students associated with democratic or oppositional activist groups. The main purpose of sport in PE was the detection of elite athletes who would take part in national and international events, including the Olympic Games. An example of this vision occurred during the 1970 Soccer World Cup, in which the military government launched the slogan "Brazil, love it or leave it!" This slogan was followed by a press release of a vainglorious and nationalist chorus that preached the integration of soccer fans for the love of the nation (Betti, 1991; Darido, 2003).

Nonetheless, the sport movement did not produce the expected Olympic outcomes, and physical activity practices did not change the population's healthy habits as envisioned. In 1980, a new pedagogical perspective called New School changed the education scenario. Inspired by John Dewey's experiential learning theory, this perspective integrated psychomotor, cognitive, and affective domains to the teaching and learning process. The New School perspective was a consequence of the Brazilian democratization political stage, the reconstitution of public organization groups (e.g., unions, students' organizations), and the establishment of the first graduate programs in PE in Brazil (Betti, 1991; Darido, 2003). During this period, university professors with international experiences brought to Brazil new perspectives that contributed to the development of national curriculum guidelines.

During the New School period, physical activity became exclusively associated with body movement that could produce substantial energy expenditure during leisure, fitness activities such as sports, and daily tasks such washing car, gardening, and cleaning (Bouchard & Shephard, 1994; Tani, 1996). While PE became exclusively associated to the *culture of the body*, it targeted students' development of skills, quality of movement, autonomy, potentiality, and possibility for self-regulation to benefit the pursuit of a healthy and active lifestyle. As a result of this new pedagogical perspective, the year of 1996 marked the period in which PE became a compulsory curricular discipline (Brasil, 1996). The purpose of this curriculum was to promote intentional, sequential, and systematic curriculum based on the *culture of the body* found in culturally traditional games, gymnastics, sports, martial arts, and dances (Ferraz & Macedo, 2001b).

The Scope of PCN in PE

The Brazilian Curriculum Parameters (PCN) was an initiative from the Brazilian Ministry of Education (Brasil, 1996). It became a consensus that the curriculum established at that time, which was implemented by individual states and school districts, was excessively vague. It lacked clear elaboration of specific learning outcomes, content, assessment, and alignment with the contemporary advances in education (Sá Barreto, 1995). Therefore, the Ministry of Education, instead of subsidizing the improvement or re-elaboration of curriculum proposals at local level, decided to centralize common curriculum guidelines to produce a national document that would function as a recommendation (aka parameters) to support nationwide school districts (Brasil, 1997a, 1998a).

The PCN documents were written by a panel of professionals, including mainly public university professors influenced by disciplinary groups. Ball and Bowe (1992) defined disciplinary groups as a panel of experts in specific curriculum subjects. Although the disciplinary groups possessed diverse academic expertise, recognized scholarship, and national credibility, this panel agreed to utilize the concept of the *culture of the body* as a central purpose in PE curriculum. The notoriety of these guidelines received attention from international funding agencies, such as the United Nations Development Program (UNDP) and United Nations Educational, Scientific, and Cultural Organization (UNESCO; Brasil, 1997a, 1998a). These partnerships

strengthened the development of curriculum guidelines and possibilities for standardized assessment.

Although the PCN documents were revised by different governmental sectors, private and public universities and also professional and scientific associations demonstrated criticism toward the final version of the document, because its review process was short and lacked public debate (Lopes, 2006). The educational audience perceived this quick elaboration process as a political strategy to accelerate the document approval, as opposed to a better paced democratic process of discussion and development of a national document (Lopes, 2006).

Cultural Plurality as a Transversal Theme

Cultural plurality refers to the integration of pedagogical content with different disciplines, without the need of creating of new subject areas. Transversal themes consisted of essential topics that presented social urgency in an interdisciplinary form, such as ethics, health, environment, sexual orientation, and cultural plurality (Brasil, 1997c, 1998c). For example, urban communities present higher risks of automobile accidents than rural ones. In this case, traffic education could be considered a transversal theme at a local level. On the other side, transversal themes such as deforestation and drug and alcohol addictions could be considered nationwide transversal themes.

Cultural plurality addressed knowledge, respect, value of cultural and social diversity, identification of social and cultural inequalities, and discriminatory actions (Brasil, 1997c, 1998c). The incorporation of cultural plurality as transversal theme was a result of conflicts and disputes among different Brazilian cultural and ethnic groups, such as the exclusion of Native Brazilian groups' social and political decisions. Sacristán (1992) and Lopes (2006) called attention to a possible misconception associated with these types of conflicts and disputes. They argued that tolerance and respect caused by conflicts and disputes may disguise a sentiment cultural superiority. This interpretation clarifies that cultural plurality cannot be seen separated from power relations, but it certainly can be included in the political and educational agenda. Cultural plurality brought to the school curriculum social justice aspects such as inclusion, acceptance, and respect for socioeconomic and culturally diverse communities.

Cultural Plurality in PE: Learning Outcomes

The learning outcomes related to cultural plurality stated that students would be able to value sociocultural differences and stand against discrimination regarding social class, beliefs, sex, ethnicity, or other individual identities. It reflected everyday practices of civil rights, political and social responsibilities, feelings of solidarity, cooperation and rejection of injustice, and treating others in the same way that one wants to be treated (Brasil, 1997b). The infusion of cultural plurality to the PE learning outcomes received support from federal law (Brasil, 1996, 2013) and from the international community, for example, the Jacques Delors' International Commission on Education for the Twenty-First Century report created by UNESCO in 1996 (Delors, 1996) and the Intercultural Education Guidelines (UNESCO, 2006). Both documents indicated the need to prepare citizens who respect differences and can positively influence globalization.

Unquestionably, the inclusion of cultural plurality in PE was well received by the academic and educational communities. It explicitly suggested a shift from pedagogical practices that exclusively focused on physical abilities and sport skills to more meaningful and inclusive practices (Ferraz, 2001). This aspect reflected a fragile deficiency in the discourse of power relations in which "traditional sports" typically addressed as PE content were basketball, volleyball, soccer, and handball. It was acknowledged that was not enough to exclusively include nontraditional content in the curriculum, but enough to be thoughtful of why some content was included and other content neglected.

The Missing Content in the PCN in Physical Education

The PCN in PE proposed three criteria to address the selection of content that warranted cultural plurality: (a) social relevance, (b) students' developmental levels, and (c) contextual variables. Even though cultural diversity was contemplated in the development of the PCN, it is surprising that it did not emphasize African and Native Brazilian games, dances, and martial arts. Currently, the Brazilian population is approximately 204,450,649 (Instituto Brasileiro de Geografia e Estatística [IBGE], 2015). Significantly, the African Brazilians represent 53% of the population. With a smaller

population, but with no less significance, Native Brazilians represent less that 1%, but they are present in all five regions of the country. Native Brazilians consist of 305 different ethnicities and 274 languages (IBGE, 2015).

One aspect that defines social relevance within the *culture of the body* perspective is the presence of sports or games that are considered popular. Popularity can be triggered by the cultural industry, which frequently shows interest in marketing products that stimulate cravings and preferences. For example, the hegemony of sport in Brazil can be identified through a massive broadcasting of American basketball and football (e.g., NBA, NFL) and European soccer leagues (e.g., Champions League, Euro Cup). Individual sports such as track and field, swimming, gymnastics, dance, and capoeira are typically neglected. It is important to reaffirm that the perspective of the *culture of the body* was and still is not to ban traditional or popular sports from PE, but to consider the inclusion of physical activities that are valued by the least favored social groups while recognizing their resilience and endurance throughout history.

The inclusion of physical activities of the most and least favored social-cultural groups provides students with opportunities to value their own background and to comprehend others' differences. The perspective of incorporating the most and least favored social-cultural groups proposes to decolonize the curriculum. This idea contradicts the exportation of cultural models that exclusively aim to maintain the economic and cultural influence of sovereign countries, which are established by the dominant groups within the country (Apple, 1996, 2008; Young, 2014).

This section of the paper intended to show that the era of the PCN in PE left unresolved questions about the relationship between cultures and subcultures, and doubts regarding the effectiveness of the curriculum. Despite questions, doubts, and learned lessons, a new curriculum era in Brazil has started and new inquiries and challenges are to come.

After 20 years of dissemination, it is still unknown the effect of the PCN on teachers' content knowledge. In addition, there is no evidence on how teachers implemented these guidelines into their curriculum and no records about the effect of the PCN on student learning. This lack of interest in conducting research could

be attributed to inefficient dissemination of the document and the absence of curriculum accountability in schools. Another fact that could have limited the accountability of the PCN was that the educational system at local and national levels did not provide enough professional development to certified PE teachers. In contrast, positive aspects that fostered the utilization of the PCN were (a) they were included in the PE teacher education curriculum; (b) they were a required knowledge base on the exams that teachers take to be employed in public schools; and (c) they were distributed and available, at no cost, to all schools in the nation (Brasil, 1997a).

The Transition From Guidelines to a Compulsory National Curriculum

Brazil is a country characterized by a vast cultural diversity and deep social inequalities. Although federal law protects and emphasizes individual state's autonomy in organizing their educational system and building their own curriculum (Brasil, 2013), the current BNCC (MEC, 2017), plays a fundamental role in giving directions to the nation. The BNCC describes essential competences in PE that all students should develop. In addition, it conveys equality as a principle in which contextual peculiarities should be addressed.

Inequality has been present throughout the Brazilian educational history, in terms of access to school for all, student retention, and learning. Among the student population, inequalities are noticed in relation to race, sex, and family socioeconomic background. Yet, more recently, the percentage of schooling in Brazil has advanced and is providing more opportunities to all Brazilians. National statistics agencies (IBGE, 2015) reported the following ratios for school enrollment in Brazil: (a) 82.7% for children between 4 and 5 years old, (b) 98.5% between 6 and 14 years old, and (c) 84.3% for adolescents between 15 and 17 years old.

In light of this circumstance, the challenge of developing a curriculum and making pedagogical decisions is how to overcome socioeconomic inequalities. It is necessary that planning and implementation focus on equity, which presumably would help diverse students' success. The commitment to equity would revoke the historical exclusion and marginalization of low-income individuals in urban and rural areas, Native Brazilians and their descendants,

Afro-descendants, individuals with disabilities, and people who could not finish school within a certain average age.

Based on these issues, during the process of development of the BNCC, disciplinary groups decided to more effectively include feedback from teachers, parents, social organizations, and the general population (MEC, 2017). This process occurred through comments posted via the Internet, a public hearing, public debates, and an invited panel of professionals during different phases of the elaboration of the curriculum between September 2015 and December 2017.

BNCC and Competency-Based Learning

The strategy adopted by the BNCC was the use of a more objective language in the document. For example, compared with PCN, the BNCC document has short and more precise learning outcomes across different school grade levels. Even though the *culture of the body* perspective was carried over as a major purpose of the BNCC in PE, the development of learning competencies was the major difference from the previous PCN. The concept of competencies had already been contemplated in Brazilian legislation (Brasil, 1996). Competencies have been part of pedagogical discussion throughout the years in curriculum development in different states and has been used in the international scenario. This approach has been addressed by the Organization for Economic Cooperation and Development (OECD), which coordinates the Program for International Student Assessment (PISA), and UNESCO (MEC, 2017).

Based on the learning competency approach, the BNCC indicates what student should know and be able to do to authentically prepare them for life and for the workplace. The BNCC PE competencies integrate different dimensions of skills and knowledge such as (a) movement experience and movement competence; (b) appreciation of movement activities as a performer and as a spectator; (c) reflection in action regarding challenges, novel activities, and adjustments of own interests in relation to others; (d) building values in the context of physical activity and a democratic society; (e) analysis of concepts and principles embedded in sports and physical activities, including fitness; (f) comprehension associated with the process of movement activities across the globe within a sociocultural context; and (g) active participation in a democratic

community by finding and/or creating opportunities to participate in physical activities.

The Scope of the BNCC in PE

According to the BNCC (MEC, 2017), the growth of globalization requires the development of competencies to prepare individuals to learn how to learn, to be collaborative, resilient, and open to new ideas. Built on this proposition, the BNCC in PE intends to advance the curriculum to an era of global awareness, in which psychomotor domain should not be neglected in favor of only affective and cognitive outcomes. Instead, the BNCC claims for a vision where human endeavors are mediated by verbal, physical (i.e., body movement or expression), visual, sound, and more contemporaneously, digital sources of communication. Physical education, now included in the language arts field, endorses a curriculum based on the concept of the *culture of the body*, which is not limited to human movement in space and time, in athleticism, or in exercise science, but in human movement as means to self-expression, communication, and codification of social values that occur throughout a person's history.

Not surprisingly, it is important to emphasize that PE, per se, has the potential to offer students a plethora of experiences to foster their cultural awareness. Based on this potential, the BNCC competencies strengthen that a PE lesson should be taught as a cultural-dynamic phenomenon. This means that it would incorporate elements of diversity that can help all students to reconstruct knowledge to expand their body awareness, self- care, care of others, autonomy, and confidence to adopt a healthy and active lifestyle in society (MEC, 2017).

Final Considerations

This analysis suggests that evolution of PE in Brazil resulted in significant positive changes in terms of inclusiveness, cultural diversity, and the expansion of the content through the concept of *culture of the body*. Multiculturalism, although still a challenge, was indeed considered in both PCN and BNCC documents. This fact can be seen as an advance in the Brazilian educational history, which used to be limited to development of physical skills and to the search for talents in sports as main targets.

The BNCC marketing campaigns seem to be more assertive in increasing the awareness of the public that the new compulsory

curriculum has been established for all students. Multiple media sources have promoted the existence and benefits of the BNCC. The BNCC proposes that students should have access to a common content knowledge, independently from their geographic area. It is important to comment that although experts in the PE disciplinary groups elaborated the BNCC aiming for common content knowledge, they intentionally left space for negotiations that occur in the relationships among teachers and students in the classroom, legitimizing teachers as the curriculum designers, since they have the ability to perceive, create, and assess what is relevant to the students.

Despite all the efforts made to produce an effective compulsory curriculum, the Brazilian legislation still needs to evolve toward an effective education system. A certified physical education teacher, for example, is not required in early childhood, kindergarten, and primary school levels. Research has shown that general education teachers are not qualified to teach PE because they lack understanding of appropriate common and specific content knowledge (Ferraz & Macedo, 2001a). Similar to teacher education programs in the United States (Schneider & Lounsbery, 2008; Siedentop, 2009), typical Brazilian elementary teacher education programs focus mainly on reading, writing, and mathematics, leaving physical education and arts in a less important educational category (Ferraz & Macedo, 2001a, 2001b).

Future studies in Brazilian curriculum could examine how physical educators implement and adapt the BNCC to their specific contexts. This could be conducted (a) quantitatively, via survey in which physical educators identify adaptations and challenges related to the selection of learning outcomes and content that are meaningful to their students, and (b) qualitatively, via interviews in which physical educators identify their perceptions of their implementation and their difficulties related to the pedagogical content knowledge, selection criteria of the content, and teaching strategies.

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SPORT FINANCE

Moving Up and Paying Up: A Case Study of Western Kentucky University's Move to the Football Bowl Subdivision

Lawrence W. Judge, James Johnson, Don Hoover, Dan Tracy, Kara Holtzclaw, Andy Walsh, Kayla Dempsey, Taylor Harris

Abstract

A trend among college football programs is to ascend from the Football Championship Subdivision (FCS) to the Football Bowl Subdivision (FBS). While nine football programs have initiated the transition to the FBS since 2012, the football program at Western Kentucky University (WKU) was the only program from 2005 to 2011 to reclassify from the FCS to the FBS, providing a unique opportunity for a case study. Spending and revenue trends continue to fluctuate in athletic programs and in higher education at large. It is important to recognize the repercussions financially and otherwise of football reclassification and consider if elevating to FBS is a fiscally responsible decision for universities. Several financial decisions, including a stadium renovation, facilities expansion, aggressive coaching moves, conference realignment, and upgrading the nonconference schedule,

Lawrence W. Judge is a professor, School of Kinesiology, Ball State University. James Johnson is an associate professor, School of Kinesiology, Ball State University. Don Hoover is a professor, Department of Physical Therapy, Western Michigan University. Dan Tracy is seminarian, St. Francis de Sales Seminary. Kara Holtzclaw is a behavioral health therapist, Community Health Network, Indianapolis, Indiana. Andy Walsh is a graduate assistant, School of Kinesiology, Ball State University. Kayla Dempsey is director of marketing, North Carolina High School Athletic Association. Taylor Harris is an athletic trainer, Indy Health and Fitness. Please send author correspondence to lwjudge@hotmail.com

demonstrated that WKU's football program was an early adopter of the current reclassification trend in college athletics. By studying the case of WKU's football transition to the FBS, we can explain the longitudinal impact of such a commitment and make connections to current trends in college football.

College football in the United States has become incredibly popular, surpassing professional basketball as the nation's third-most popular sport (Harris Interactive, 2014). The ever-increasing popularity of college football has spawned a surge in spending by athletic departments and consumers, which was reflected in data collected by the National Collegiate Athletic Association (NCAA; Fulks, 2013) and the Knight Commission on Intercollegiate Athletics (2014a). This increased spending on athletic programs has resulted in an "arms race" among universities. Athletic departments vie to entice students and student athletes by creating larger and more luxurious stadiums, as well as state-of-the-art training and practice facilities (Knight Commission on Intercollegiate Athletics [KCIA], 2014b, Chapter 4). It is essential for universities to consider the benefits and costs of these pricey modifications. As collegiate athletic department expenses have risen, the nonsubsidized revenue sources (e.g., ticket sales, contributions, rights/licensing fees) have led to shortfalls in cash flow, creating increased reliance on subsidized revenue (e.g., student fees, school funds, government resources, alumni gifts) to balance budgets across the majority of public universities with college football teams (USA Today, 2013). These escalating spending trends are most evident at the Football Bowl Subdivision (FBS) level, with some university athletic budgets exceeding $100 million annually (USA Today, 2015).

In the midst of its popularity and escalating expenses, another trend has emerged within college football: reclassification. In 1978, the first year the FBS level was so designated (then known as Division I-A—the most elite level of intercollegiate athletic competition), there were 138 football teams competing within this classification ("1978 NCAA," n.d.). The number of FBS teams fell to a low of 104 in 1987 ("1987 NCAA," n.d.) but reascended to 128 in 2016 ("2016 NCAA," n.d.). Over a third of the 24 teams debuting or returning to the FBS have moved up to this classification in the last 6 years. Since 2011, nine schools (Appalachian State, Charlotte, Georgia Southern,

Georgia State, Massachusetts, Old Dominion, South Alabama, Texas State, UT-San Antonio) reclassified from the Football Championship Subdivision (FCS, formerly known as Division I-AA) to the FBS. Prior to this recent wave of reclassification among schools from 2011 to 2016, Western Kentucky University (WKU) was the only team to reclassify from the FCS to the FBS between 2005 and 2011. As the single school to make this competitive jump during this 6-year period, WKU made changes to its university mission and its athletic department goals, which provided a model for future institutions considering the move from FCS to FBS. Thus, examining the case of WKU provides a unique opportunity for the analysis of the motivations, mechanics, and outcomes of reclassification to FBS football.[1]

Western Kentucky University

WKU, founded in 1906, is one of Kentucky's eight public universities. WKU's main campus in Bowling Green has 17,315 undergraduate students with more than 80 degree programs available for study within six colleges (WKU, 2015). Although WKU offers an extensive variety of academic opportunities, it is viewed as a regional comprehensive university compared to the larger, nationally recognized universities located within Kentucky (i.e., the University of Kentucky and the University of Louisville; Upright, 2009). The available student demographic information confirms this description of WKU, as 78.6% of its students are Kentucky residents and the remaining 21.4% are from 47 other U.S. states (16.0%) and 74 countries (5.4%; WKU, 2015). WKU admits 92.3% of its applicants, a significantly higher percentage than both the University of Kentucky (67.3%) and the University of Louisville (76.3%), which are research-intensive institutions with more selective undergraduate admissions rates. Additionally, WKU's average freshman retention rate (73%) falls below those of the University of Kentucky (81%) and the University of Louisville (78%; U.S. News Civic, 2014). While WKU demonstrates many positive educational markers, the aforementioned admissions and retention metrics suggest the institution's

[1]We presented a 1,000-word paper and 15-min presentation that covered several of the topics presented in this article at the 2014 College Sport Research Institute (CSRI) Conference in Columbia, South Carolina. We competed in the CSRI Graduate Case Study Competition and took first place based on the results of a four-judge panel comprising sport management academicians and professionals.

measures fall short of those exhibited by the flagship institutions within the state.

WKU implemented a new vision statement as part of its 2012–2018 Strategic Plan, seeking to upgrade its university profile to a nationally recognized university. The school labeled itself as "A Leading American University With International Reach" (WKU, 2012a). The WKU Strategic Plan laid out specific intentional goals of fostering academic excellence, promoting a dynamic and diverse university community, improving community life quality, and supporting the core mission with a robust campus infrastructure (WKU, 2012a). WKU is now implementing these goals throughout the institution, including its athletic department.

The university has experienced a great deal of athletic success. Its 19 athletic teams all participate at the Division I level, and it is currently a member of Conference USA. The WKU Hilltoppers have made a combined 41 NCAA Tournament appearances in men's and women's basketball (23 and 18, respectively), and between 2000 and 2014 in all sports, the institution won more Sun Belt Conference championships (92) than any other Sun Belt Conference school (WKU, 2014a). Its football team succeeded for many years at the FCS level, qualifying for the NCAA FCS playoffs six times between 1997 and 2004 and winning the FCS national championship in 2002.

Because of the institution's consistent success in football, the WKU Board of Regents in 2006 approved the decision to reclassify its football team from the FCS to the FBS. While the team struggled initially in the transition to FBS (0–12 in their inaugural FBS season, 9–15 the following two seasons), the program enjoyed improvement each subsequent season. This success helped the school to move from the Sun Belt Conference to Conference USA in July 2014. WKU football has continued its on-field success since joining Conference USA, compiling a 31–10 record (including a 12–2 record in 2015 and 11–3 record in 2016), winning two conference championships and three postseason bowl games and beating a number of teams from the Power Five conferences (i.e., SEC, ACC, Big Ten, PAC-12, and Big 12) during the nonconference portion of their schedule.

Theoretical Framework

In research on college athletics, it is important to assess possible theoretical explanations for FCS-to-FBS reclassification and

noteworthy changes in institutional resource allocation and/or spending. With little previous research published on reclassification within college sports, several theories associated with organizational change are germane. Foremost, as the decision to reclassify affects the athletic department and the university at large, the decision at WKU may best viewed through an organizational theory approach. More specifically, an organization may be defined as a unit of people structured or managed with the purpose of meeting a need or pursuing collective goals ("Organization," n.d.). Thus, a university meets this operational definition. WKU was founded in 1906 as one of the many state normal schools across the United States that developed into 4-year state teachers' colleges and eventually into comprehensive state universities. Thus, WKU was founded over 100 years ago to meet the need for primary and secondary school teachers within the Commonwealth during the Progressive historical era. As the society and its needs changed, the collective goals of the institution also changed. Accompanying such changes in needs and collective goals for any institution are competing opinions among the people within the organization on topics including commitment to institutional mission, perceived opportunities for future growth, and allocation of available resources in an equitable fashion. Such competing opinions—and any accompanying tensions—are evident, in turn, in the allocation of available resources to athletics by higher education institutions (Hundley, 2013; Pratt, 2013; Stevens, 2011; Vogt, 2013). In this context, Cunningham and Ashley (2001) reported that "incorporating competing theories is a beneficial method to explain organizational phenomena" (p. 58). This view may be of value when examining the case of WKU's elevation to FBS, a scenario in which competing opinions inevitably exist regarding institutional priorities and the importance of football success in the broader educational context.

Previous research has identified *isomorphism* as a more specific organizational theory to explain organizational transitions, such as the one exhibited by WKU's football program over the past decade (DiMaggio & Powell, 1983). DiMaggio and Powell (1983) described isomorphism as a "constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions" (p. 149). In this context, empirical data clearly

suggest that expenditures are increasing rapidly in collegiate athletics (Fulks, 2013; KCIA, 2014a). Consequently, as interest in and associated expenses of college athletics continue to increase, university leaders may feel pressure to devote more resources into athletics to contend with other competitive institutions (Tsitsos & Nixon, 2012). Otherwise, university leaders hazard a scenario where their respective institution risks falling behind in the realm of college athletics, an important consideration in an ever-changing landscape regarding the college search process.

To gauge the influence of organizational isomorphism in college sports, Cunningham and Ashley (2001) surveyed athletic directors and assistant athletic directors from 68 athletic departments (22 Division I, 24 Division II, and 22 Division III). Using three competing perspectives within isomorphism (i.e., strategic choice, population ecology, and institutional theory), the researchers found that athletic departments weigh influences from internal and external entities as they delegate and compete for resources. In this vein, internal entities include efforts such as supporting and leadership of coaches, staff, and student athletes; minimizing risk management (legal concerns); serving as liaison between the athletic department and the academic community; or completing administrational paperwork. External entities might include energies devoted to conference obligations and compliance, fundraising, and promotions and marketing (Cunningham & Ashley, 2001). These findings by Cunningham and Ashley support previous research that isomorphism exists in college athletics and that multiple perspectives should be considered for application of this theory in analysis of sport administration (Danylchuk & Chelladurai, 1999). Researchers have emphasized that the presence of isomorphism in athletics suggests that athletic directors manage their departments to resemble other departments in their field, which produces the isomorphic effect. Managing college athletics is clearly an endeavor where individuals leading organizations strive to emulate the characteristics of target institutions, either partly or wholly. Along these lines, "the presence of isomorphism suggests that many athletic directors consciously choose to guide their athletic departments in a fashion similar to others in the industry, thus leading to organizational inertia" on a broad scale across the industry (Cunningham & Ashley, 2001,

p. 58). In other words, there exists a culture within college athletics to embrace innovation or novelty when striving to emulate target programs, but only to a point. As educational leaders who facilitate rapid or wholesale changes may reap large rewards, they may also face negative repercussions for initiating institutional changes that are viewed as too radical when weighed against a broader backdrop (Herald Staff, 2016a; Hundley, 2013; Mudd, 2016a; Pratt, 2013; Vogt, 2013).

Similar to isomorphism, but focused more upon the decision-making process, the *escalation of commitment* theory also warrants consideration in a discussion of resource allocation and spending trends in college athletics. Staw (1976, 1981) introduced this theory as a way to help further understanding of how organizational leaders can justify increasing investment related to previous investment decisions despite new knowledge that may alter the expected outcome. Using a model of the commitment process, Staw (1981) labeled four determinants of commitment to a course of action: motivation to justify previous decisions, norms for consistency, probability of future outcomes, and value of future outcomes. Leaders within college athletic departments apply this model when augmenting expense totals through the following thought processes: recalling previous team successes, stressing similar spending by other universities, or alluding to the effect of college spending on the future of student athletes, the athletic department, and the university at large (Nite, Hutchinson, Melton, & Bouchet, 2015). There appears to be little restraint nationally within the current climate of escalation of commitment, as each season is marked by top-tier programs building upscale facilities aimed at attracting and retaining top athletic talent. The most recent example of such escalation of commitment is Clemson University, where in January 2017 final construction was completed of a $50 million, 140,000-square-foot football training facility complete with a slide, indoor golf simulator, laser tag, bowling alley, arcade, and nap rooms (Sports Illustrated, 2016). The completion of this facility came at the same time Clemson won the 2017 FBS national championship, suggesting such spending might be justified.

From a financial perspective, McEvoy, Morse, and Shapiro (2013) also reported increased athletic spending in recent years when they studied college athletic revenue among public FBS schools from

2002 to 2007 and developed a model to explain the variance in revenues. Using Bowen's (1980) revenue theory of cost as a guide, the researchers found conference membership (i.e., FBS vs. non-FBS) was the most important predictor of department revenues, but university enrollment was also a strong predictor of annual budgets. In regard to markets of college sport, county population and per capita income were insignificant predictors of athletic department–generated revenues, demonstrating the presence of elite football programs in markets of all sizes. This research suggests that athletic programs located in relatively small communities such as Clemson, South Carolina, Starkville, Mississippi, and Manhattan, Kansas, can field football programs capable of competing from year to year with conference rivals located in large metropolitan areas, such as Atlanta, Nashville, and Austin, respectively. Time will tell the extent to which this research also applies in the WKU case scenario on a long-term basis, as the Bowling Green metropolitan area is much smaller than many of the cities making up Conference USA (e.g., Old Dominion University in Norfolk, Florida International University in Miami, University of Charlotte in Charlotte, Florida Atlantic University in Boca Raton, University of Texas at San Antonio, Rice University, University of Texas at El Paso).

Using organizational (isomorphism), decisional (escalation of commitment), and financial (revenue theory of cost) theories provides a more holistic lens on which to assess and explain the reclassification process of WKU's football program. Nonetheless, a review of literature suggests that schools undergoing reclassification (i.e., FCS to FBS) have yet to be studied within the sport management literature generally or using these differing theories specifically. Thus, we discuss applications of these theoretical concepts in this case study of WKU's reclassification.

Athletic Spending

Spending on college athletics has been increasing since 2005 (KCIA, 2014a), and even in the midst of an economic recession, intercollegiate athletics managed to maintain financial stability (Stinson, Marquardt, & Chandley, 2012). Reclassifying the football program at WKU prompted a significant increase in the institution's spending on athletics and is consistent with overall spending trends in college athletics.

From WKU's first year as a transitional FBS member (2007) until 2012, athletic expenditures increased annually from $17.2 million to $25.7 million (Appendix A), which represents a 50% increase in yearly expenditures (USA Today, 2013). In comparison, when WKU joined Conference USA in 2014, East Carolina University (ECU; in its final year in the conference) was the highest spending institution in the conference. ECU increased its athletic expenditures from 2005 to 2012 by 54%, from $21.7 million to $33.6 million over this time frame (USA Today, 2013). The spending by these two institutions is representative of the primary expenditure areas of coaching and staff, scholarships, buildings, grounds, recruiting, and team travel (USA Today, 2013). Specific to WKU, this increase in spending on athletic expenditures during the transition to FBS membership is an example of institutional isomorphism: The university leaders made financial decisions so that the athletic budget was more comparable to that of benchmark peer institutions in the FBS. Similarly, these expenditures also support the work completed by McEvoy et al. (2013) that indicated conference affiliation was the strongest predictor of department revenues; WKU clearly increased its expenditures on football to emulate conference brethren when the Hilltopper program moved from the FCS level to FBS membership in the Sunbelt Conference and then to FBS membership in Conference USA.

WKU incurred several financial expenditures to reclassify at the FBS level. It paid a $5,000 fee to the NCAA with its notification of intent to reclassify and offered $3.23 million more annually in grant-in-aids to student athletes, partly by increasing its football scholarship allocation from 63 to 85 (Frieder, 2007; NCAA, 2013). These increased expenditures were required for WKU to meet the minimum standards for all institutions reclassifying from the FCS to the FBS. Schools that recently made the decision to begin football programs classified at the FBS level (e.g., University of North Carolina at Charlotte, Georgia State University, and Mercer University) will endure similar financial expenditures while they transition to full FBS programs (Desrochers, 2013). For example, the University of North Carolina at Charlotte has already seen its expenses rise. Its expenditures for athletics more than doubled from $9.6 million in 2005 to $20.2 million in 2012 (USA Today, 2013). This rise in spending is consistent with the average expenditure increase of $2.6 million/year

following reclassification, according to NCAA research (Frieder, 2007). The FBS market dictates higher expenditures are necessary for athletic programs to offer competitive facilities and coaching salaries (Fulks, 2013), which again supports the findings of McEvoy et al. (2013) that conference affiliation greatly influences department expenditures.

One of the higher expenditures for WKU during the transition to FBS competition was the approval of plans for a $37.5 million renovation for its football stadium in 2006 (WKU, 2006, 2014b). Although the seating capacity increased by 26% with these renovations on a stadium originally constructed in the 1960s, attendance at WKU football games only increased by 6% from 2007 to 2012 (NCAA, n.d.). Extensive stadium renovations are not unique to WKU athletics, nor are they limited to schools elevating from FCS to FBS competition. From 1995 to 2005, institutions in the United States spent a combined $15 billion on upgrading sports facilities (Bennett, 2012), which only appears to be increasing. In the Big Ten Conference alone, Indiana, Illinois, Michigan, Nebraska, Iowa, and Wisconsin each spent $50 million to $86 million over the past decade on football stadium renovation projects (Bennett, 2012). These expenditures do not include renovations made to basketball arenas or upgrades made to house or support other non-revenue-generating sports. While their expenses were not as high as the larger schools in the Big Ten or other Power Five conferences, WKU still accumulated significant debt from renovations. Total athletic facilities debt at WKU in 2012 was $58.3 million, 49% above the FBS median (KCIA, 2014a). These data further illustrate the existence of institutional isomorphism (Cunningham & Ashley, 2001), as the leaders at WKU delegated these resources within the athletic program rather than addressing other needs within the institution, such as replacing aging classroom and laboratory spaces for science programs (Holloway, 2013b).

On average, coaching salaries and benefits remain the highest portion of expenditures for FBS programs, making up 35% of total expenses (Fulks, 2016). Coaches typically receive a base salary from the university and bonuses for on-field performance measures (USA Today, 2013). Although increases in coaching salaries have been seen across the FBS, programs moving up to FBS appear to have

the largest percentage increases in payroll expenditures. At WKU, annual coaching and staff salaries increased from 2005 to 2012 by 55% (USA Today, 2013). The head football coach salary grew from $259,908 in 2009 to $855,600 in 2013, making it the largest salary increase in the school (USA Today, 2013). The significant increase WKU experienced in coaching salary at this time was largely due to the hiring of head coach Bobby Petrino in 2012, who had most recently been the head coach at the University of Arkansas. The rising cost of coaching salaries is controversial, as many of the top-paid public employees of a state are college football or basketball coaches (Newman, 2014).

The contracts and buyouts associated with hiring a top-tier coach are also on the rise, and WKU has not been immune to this trend. A coach who breaks a contract to accept a job with another institution is typically required to pay the school when he leaves, and the new employer usually agrees to pay the compensation to the previous school (Berkowitz & Upton, 2012). In 2012, head coaching changes in FBS programs accounted for more than $50 million in expenses for contract buyouts (Berkowitz & Upton, 2012). WKU hired Coach Petrino in 2012 to replace Coach Willie Taggart, who left to take over the football program at the University of South Florida (USF), resulting in WKU receiving a buyout totaling $500,000 from USF (Staff Report, 2012). Coach Petrino's buyout at WKU was $1.2 million, which the university received in compensation when he left for Louisville after the 2013 season (Lintner, 2014). Following the 2016 season, WKU received a buyout of $900,000 from Purdue University, when Coach Jeff Brohm left the Hilltoppers to lead the Boilermakers football program, increasing his guaranteed annual salary from $850,000 to $3,300,000 (Baird, 2016). Such transitions in leadership of FBS football programs demonstrate the extreme financial commitment FBS institutions such as WKU make to get a top coach for their program, as well as how transient some coaching tenures can be in contemporary college football. From a theoretical framework, the case of WKU hiring Coach Petrino may be viewed as an example of mimetic isomorphism, as the organization imitated institutions within the Power Five conferences by seeking out and securing the services of a college football coach who had been successful at that level but did not coach a team the previous season. Even with hiring

a coach at a high price, universities are not assured a high-ranking football team, demonstrating the risk in expanding these athletic expenditures. Moreover, the risk is elevated because the coach may not stay for long, as evidenced by each of the tenures at WKU of Taggart, Petrino, and Brohm. Still, by taking such a risk, institutional leaders place a substantial investment in a coach in hopes of on-field success for their football programs (Tsitsos & Nixon, 2012).

Empirical evidence suggests that across the board, operating expenses for football programs and student athletes are also increasing. During WKU's reclassification period, annual expenses for football increased by $2.2 million (a 52% jump) and spending per football student athlete was up 96% (KCIA, 2014a; U.S. Department of Education, 2013). The $51,160 that WKU spent per football student athlete in 2012 (Appendix B) is far below the median spending per FBS football student athlete, which reached $115,024 in 2014 (KCIA, 2014a). For WKU to hold its ground in the college athletics *arms race,* spending per student athlete will likely increase to similar numbers of other FBS programs. From a theoretical standpoint, the increased operating expenses at WKU are one example of escalation of commitment where these expenditures may be viewed as investments that increase the probability of future outcomes, the value of future outcomes, or both. Another example of escalation of commitment in the WKU case is an effort to construct a $22 million, 140,000-square-foot indoor football training facility, which was originally announced in August 2016 but tabled in December 2016 (WKU, 2016b; Herald Staff, 2016a). Indoor football training facilities are seemingly obligatory for football programs competing in the Power Five conferences, but these structures are much less common for schools participating in smaller conferences. For example, among the current Conference USA members, only Marshall University has such an indoor training facility. While some perceive indoor practice facilities may provide WKU with a competitive advantage within Conference USA, there are questions surrounding the proposed funding of such a deal (Herald Staff, 2016b; Mudd, 2016a, 2016b). Football programs that spend more have more frequent on-field success and are pressured to spend more to continue that success (Sparvero & Warner, 2003), as well as to emulate characteristics of the highest echelon programs in anticipation of future

success. Thus, athletic spending will continue to increase at universities electing to move up to FBS and compete at that level.

Subsidies

To balance ledgers on an annual basis, the majority of Division I institutions must rely on outside sources (e.g., alumni donations, tuition, student fees) to subsidize athletic costs (Desrochers, 2013). As recently as 2015, only 24 of the FBS programs generated enough revenue to cover their augmented expenses (Fulks, 2016). Evidence suggests that subsidization is on the rise across the nation, as subsidies for all of Division I athletics increased $200 million from 2011 to 2012 (Berkowitz, Upton, & Brady, 2013). This trend indicates that institutions are relying heavily on nonathletic entities and the student body to fund athletic departments. In the case of WKU, students paid over $6.5 million in student fees in the 2010–2011 academic year, making WKU the 24th highest-paying FBS student body for athletic fees (Dosh, 2013b). From 2007 to 2012, during its jump to the FBS, WKU expenses covered by student fees and other subsidies jumped by $5.6 million annually (USA Today, 2013). The rising cost of college athletics requires other entities on college campuses to aid in funding the athletic department, often as a not-so-hidden cost of attendance passed on to students and their families.

At WKU, the above-noted subsidization of athletics over the past decade occurred simultaneously to dwindling financial support of higher education by the Kentucky state legislature, as well as aggressive growth in admission of undergraduate students. While erosion of public funding of higher education has been the overall tendency nationally since the 1980s, this trend intensified within Kentucky since the economic recession in 2008. Since that time, erosion of higher education funding from the Kentucky state legislature has decreased 17.4% (Council on Postsecondary Education [CPE], 2015). The decreased funding of higher education has contributed to a substantial shift of the cost burden of higher education to students. More specifically, within Kentucky public higher education, estimated student share of the cost burden of a college degree was 50% during the 2007–2008 academic year (state funding of the burden was 50%) and estimated student share of the cost burden increased to 67% during 2015–2016 (state funding of the burden was 33%; CPE, 2015). A snapshot of such data employing a broader timeline and using figures

adjusted for inflation shows that during 2000–2001, the net general fund per student FTE (i.e., full-time equivalent) within the Kentucky public postsecondary system amounted to $9,891 (or 66% of the $14,915 calculated cost of attendance), whereas during 2013–2014, the net general fund per student FTE dropped to $5,802 (or 37% of the $15,723 calculated cost of attendance; CPE, 2015). This report also shows that the number of degree completions at public institutions within Kentucky increased from 25,696 in 2000–2001 to 57,772 in 2013–2014, indicating that despite eroding state support for higher education students were completing substantially more degrees (54% increase). This trend of greater degree completion at higher costs borne by the students graduating from public institutions has contributed to greater student loan debt, with the estimated average student loan debt growing from $17,717 in 2007–2008 to $25,997 in 2012–2013 (32% increase; CPE, 2015). WKU has also seen enrollment growth over the recent past, as total FTE enrollment grew from 14,595 in Fall 2002 to a peak of 17,000 in Fall 2010, and leveling to 16,143 in Fall 2015, with full- and part-time undergraduate students accounting for the largest percentage increases in enrollment gains (WKU, 2008, 2012b, 2016a). In sum, as a public institution, WKU has received dwindling state support over the past two decades. The institution has also increased admissions during this period. These two factors have contributed to a scenario in which the institution has enrolled substantially more undergraduate students at a lesser per-student appropriation from the state legislature, and these factors have played out within a context in which aggressive athletic spending—much of it covered via subsidization in the form of student fees—has also increased at WKU. Thus, a large financial burden associated with a move to FBS was shouldered by students at a time when financial resources were scarce.

Subsidization of athletic expenses through nonathletic revenue streams will likely increase in the coming years because of the recent adoption of a new governing model within the NCAA for the Power Five conferences. The NCAA Division I Board of Directors recently passed legislation for a new governance model that affords these major conferences more latitude in creating their own set of rules and, in the process, likely distances these schools from the others competing in the FBS (Solomon, 2014). The new legislation increases

expenditures for the institutions associated with the five major conferences. One component of the newly passed bylaw legislation includes stipends for student athletes above the cost of attendance (Solomon, 2014). The amount of athlete stipends can vary greatly, with Tennessee paying $5,666 and Southern California paying $1,580 (Powers, 2015). FBS schools not members of the five major conferences have the opportunity to also adopt the legislation these Power Five conferences have approved. However, schools such as WKU likely would not have the financial capacity to do so at comparable levels. Yet, given the historical increases in spending, universities are so entrenched in the arms race of college athletics that they may find a way to fund such changes to remain competitive.

The recent rulings in the *Ed O'Bannon v. NCAA* case may also affect athletic expenditures and revenues for universities, given the ways that university branding and sports marketing have coalesced in recent decades. The District Court of Northern California ruled in 2013 that the NCAA's prohibition of football and men's basketball players from receiving a share of revenues from their image and likeness was in violation of federal antitrust laws (Berkowitz, 2014). The District Court ruling increases expenditures for schools, because it allows schools and conferences to deposit money capped at $5,000/year in a trust that will become payable to student athletes when they leave school or their eligibility expires (Berkowitz, 2014). In September 2016, the Ninth Circuit Court of Appeals affirmed, in part, and reversed, in part, the ruling of the District Court on *Ed O'Bannon v. NCAA*. Later that year, the Supreme Court denied an appeal that the court review the case, effectively executing a stay that will likely have profound financial repercussions in college athletics when it is ultimately settled. In the meantime, universities with the financial assets to provide this benefit to student athletes will have a clear advantage in recruiting over institutions with lesser resources, thus forcing schools such as WKU to perhaps further increase subsidies to remain competitive in the effort to recruit and retain talented student athletes. This places WKU, and other recent reclassified FBS institutions, in a precarious position of determining how much more money they will have to spend to remain competitive.

The expenses related to changes within NCAA governance, coupled with the continued rise in coaching salaries and the costs of

facility renovations, give credence to the arms race of intercollegiate athletics. Such a description of an arms race in intercollegiate athletics is a clear example of isomorphism, and the institutions that strive to compete in the contemporary Division I athletics environment. The annual growth rate in revenues and expenses within college athletics is at 4.9% (Fulks, 2016). This rate is twice the typical growth rate of the United States economy at large, indicating that college athletics is a substantial financial industry, one growing much faster than the economy. However, the model currently employed is only sustainable for a select portion of FBS schools. WKU is not included in this select portion. Yet the rising expenses that WKU experienced during its reclassification period has resulted from its decision to enter the arms race of college athletics with the rest of Division I FBS institutions. The success of the football team on the field during the past 5 years has likely strengthened the resolve of its university administrators to stay the course and adhere to the escalation of commitment concept (Staw, 1981).

Academic Return on Athletic Investment

Athletic spending is increasing at a much greater rate than academic spending across Division I institutions (KCIA, 2014a). Specifically, at WKU, athletic spending per athlete increased from $26,138 in 2007 to $51,160 in 2012. According to the KCIA (2014a), WKU's athletic spending peaked in 2009, the institution's first year as a full FBS member. Institutions typically strive to spend more on athletics because of the belief that success in athletics will lead to greater prestige and brand recognition for the institution, thus attracting more students (Desrochers, 2013). However, this chain of events has yet to transpire at WKU.

WKU is one of eight public universities within Kentucky that have received declining shares of the state budget, a total share earmarked for higher education that has dropped from 15.8% in 2004 to 12% in 2014. This resulted in a scenario in which the fixed costs of postsecondary education exceeded tuition revenues by an estimated $43.4 million in fiscal year 2014–2015 (CPE, 2014). This financing trend from the state legislature means that universities within Kentucky are increasingly being forced to educate students as the per-student funding appropriation lessens each year. These costs are also passed along to students in the form of tuition increases,

which at WKU have increased annually as much as 10% since 2000 (Collins, 2016; Hoang, 2002). Further limiting WKU's capacity to attract more students over the past decade is the its station as a regional comprehensive institution, which relies primarily upon state residents to make up its undergraduate enrollment. However, Kentucky possesses a dwindling number of high school graduates because of demographic changes within the Commonwealth (Bransberger & Michelau, 2016). In short, it may be difficult for a regional comprehensive institution to generate greater brand recognition effectively through athletic success and, in turn, use this as a primary mechanism for attracting more students within the current environment of Kentucky (Herald Staff, 2013; Holloway, 2013a).

Increased athletic costs at a Division I institution arise primarily from increased coaching and scholarship contract costs, demands for more staff, and improved facilities (Kirwan & Turner, 2010). Leaders at Division I institutions often perceive that they are forced to spend money on athletics to attract students, yet improving academic features such as classrooms or teaching staff often remains a lower priority. According to Desrochers (2013), faculty pay often remains flat and academic programs are sometimes cut. At WKU, faculty have received one pay increase in the past decade and some academic programs have been cut to assist in balancing the budget (Collins, 2016). Though some universities have cut athletic teams to limit their athletic subsidies, many academic leaders view spending less on athletic endeavors an unrealistic option when weighing competing demands within the institution. However, increasing athletic spending at Division I institutions may not be as successful at increasing recognition as some believe. For example, after the renovation of WKU's football stadium increased seating capacity by 26%, attendance at football games only increased by 6% from 2007 to 2012 (NCAA, n.d.). The revenue theory of cost suggests that WKU has yet to recoup in the way of gate receipts much of its initial financial commitment for the move to FBS.

Indeed, the athletic spending practices of Division I institutions have been criticized for not being well aligned with the larger, broader mission of higher education (Flowers, 2009). WKU administrators believed that an important component of becoming a "Leading American University With International Reach" and achieving an

overall university transformation was to compete at the highest athletic level (Lintner, 2012; Upright, 2009; WKU, 2012a). However, increases in athletic spending have occurred concomitant with a slight decrease in measures of academic quality at WKU (Orszag & Israel, 2009). Retention rates decreased by 2%, and the incoming high school grade point average decreased by .02 points from 2007 to 2012 at WKU, suggesting that athletic success has not stimulated an improvement in measures of academic excellence (National Center for Education Statistics, 2013; WKU, 2008, 2012b). Simply put, increasing academic spending, rather than athletic spending, to ensure that students are receiving a quality education may be more vital to increasing the desired characteristics of students.

Simultaneous with escalating spending on athletics, Division I institutions struggle to control academic spending because of a lack of state support, donations, and increased tuition costs (Desrochers & Kirshstein, 2012). Presidents at these institutions often raise concern with long-term trend of increased costs in athletics. Some presidents believe they may need to discontinue a less recognized sport to keep up with the demands for sports that provide more opportunity for name recognition, such as football or basketball (Kirwan & Turner, 2010). Eliminating athletic teams and reducing subsidies have addressed some of the cost issues within some universities. For example, the University of Maryland, University of California at Berkeley, and Rutgers University recently cut athletic teams and limited athletic subsidies (Desrochers, 2013). At WKU, despite the track and field program having 39 athletes recognized as NCAA All-American since 2011, and despite winning multiple team conference championships, the program had its operating budget cut by 50% in 2016 (Reecer, 2016). This decision to reduce funding for track and field at WKU may be another illustration of the theory of escalation of commitment. Given that, the football program, which possesses much greater—but to this point unrealized—potential for revenue generation, did not receive a reduction to its operating budget proportional to the cuts made to the track and field program. Similarly, Georgia State University, the University of North Carolina at Charlotte, and Mercer University recently made the decision to begin Division I football programs to increase their reputation (Desrochers, 2013), but the current spending trends raise concern for presidents of

these Division I institutions, as trends within the FBS as a whole are likely not sustainable (Hesel & Perko, 2010). Despite the negative effects some institutions experience from spending a disproportionate amount on athletics compared to other spending, WKU may be an example of a Division I institution that strives to have successful athletic programs rather than focusing primarily on improving the quality of education offered to its students.

During the time frame of the case study, Division I institutions maintained or increased spending on athletic programs, coaching contracts, facilities, and other expenses in athletics despite an economic downturn in the United States. However, academic spending did not increase at a comparable rate. At WKU, increases in athletic spending have not led to an increase in measures of academic reputation for their university. WKU experienced little change in overall winning percentage, a modest increase in applications compared to its state peers, and a lower quality of applicants. These outcomes at WKU indicate that there is little evidence in the short-term analysis to support the notion that name recognition as an FBS school results in better measures of institution academic quality (KCIA, 2014a). Conversely, increasing spending on academic facilities, teaching faculty, and educational programs could have a significant positive effect in raising the academic profile of Division I institutions, provided such an institution retains and graduates students at a consistent rate.

Arguments for increases in athletic spending are rooted in the aspiration of intangible assets, such as prestige and visibility, which a school must consider according to Wood Selig, the athletic director at WKU from 1999 to 2010 (Miller, 2010). Finances and conference affiliation follow prestige and visibility as strong considerations. While prestige and visibility are difficult to quantify, the WKU football programs overall winning percentage decreased from 69% in its final 8 years as an FCS school to 44% in its first eight seasons as an FBS school, which is a normal trend among universities making the transition from FCS to FBS (Dosh, 2013a). Additionally, the number of applicants to WKU increased by 17% from 2007 to 2012, but in-state competitors such as the University of Louisville and University of Kentucky experienced increases of 24% and 51%, respectively (National Center for Education Statistics, 2013). The little change in

overall winning percentage, small increase in applicants, and lower quality of applicants suggest that the additional athletic spending has not produced significantly increased prestige and visibility for WKU, at least in the first decade since moving to the FBS.

Conclusion

Moving up from FCS to FBS comes at a significant cost for institutions. The case study of WKU demonstrates that the risk of moving from the FCS to the FBS can outweigh the apparent rewards. It is not clear in the analysis of WKU's first decade at the FBS level that the decision has led to greater athletic nonsubsidized revenues or greater measures of academic status. Thus, institutions contemplating the move should be made aware of the potential consequences. As WKU demonstrates, such consequences come even in the midst of conference championships and bowl victories, indicating that even with athletic success a move is risky.

Assessing FCS-to-FBS reclassification under a theoretical lens is also important in an investigation of WKU's reclassification. Organizational, decisional, and financial aspects of such a reclassification must be considered for maximum benefits among the many internal stakeholders within a university community. Isomorphism is a theoretical notion that can help to explain organizational change, and this concept is evident in many aspects of the WKU scenario. When universities undergo reclassification, their leaders must understand that as interest and expenses in college athletics increase, there is a pressure, both internal and external, to contribute more money to athletics to compete, as escalation of commitment is a fundamental characteristic of contemporary Division I athletics. However, the constant process of money flowing into an athletic program facilitates growth of the athletic industry, resulting in pressure on other universities to contribute more money to their athletic programs, creating a cycle of increased interest and expenses in college athletics (i.e., arms race). The WKU case study illustrates that, through mechanisms such as increased student fees, subsidization of athletic revenues has played a central role in this elevation to FBS competition. This subsidization has occurred against a backdrop of defunding of higher education from the Kentucky state legislature, suggesting that this funding model of college football is not likely sustainable on a long-term basis. University leaders should

be aware of financial cycles before they reclassify from FCS to FBS competition, to predict the effect it will have on the spending and allocation of any revenues. Moving from FCS to FBS status can add more pressure to the entire university, not only athletics, given the higher education funding trends nationally. The financial aspects of FCS-to-FBS reclassification also may be observed through the revenue theory of cost. This research demonstrates that membership in FBS, as opposed to non-FBS, has the greatest effect upon athletic department spending, along with university enrollment. Consequently, university spending can be greatly altered by a reclassification, which can also lead to a change in university enrollment and athletic departmental revenues. Thus, financial aspects from a revenue theory of cost perspective should be strongly considered in an analysis of the risks and rewards of a FBS reclassification, as in the case of the Hilltoppers. It likely will require many decades to fully ascertain the rewards, or potential pitfalls, of WKU entering this arms race upon its athletics program and the university as a whole.

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Appendix A

Western Kentucky Revenues and Expenses 2005–2012 (USA Today, 2013)

YEAR	TICKET SALES	CONTRIBUTIONS	RIGHTS/ LICENSING	STUDENT FEES	SCHOOL FEES	OTHER	TOTAL REVENUES
2012	$1,617,294	$2,049,358	$2,046,658	$6,421,091	$11,274,541	$2,361,320	$25,770,262
2011	$1,587,381	$2,343,003	$1,682,912	$6,521,111	$7,575,504	$2,559,573	$22,269,484
2010	$1,666,379	$2,373,536	$2,039,219	$6,437,652	$9,049,848	$1,676,714	$23,243,348
2009	$1,647,058	$2,160,965	$1,717,268	$6,060,691	$7,583,982	$3,152,353	$22,322,317
2008	$1,655,224	$1,529,939	$1,554,112	$5,798,822	$7,905,203	$1,514,609	$19,957,909
2007	$1,392,274	$1,360,549	$1,384,583	$3,508,864	$8,585,634	$976,806	$17,208,710
2006	$1,520,857	$1,229,444	$1,347,352	$4,407,525	$6,338,409	$1,237,458	$16,081,045
2005	$1,306,886	$1,131,874	$1,266,923	$4,237,895	$5,810,099	$824,057	$14,577,734

YEAR	COACHING/ STAFF	SCHOLARSHIPS	BUILDINGS/ GROUNDS	OTHER	TOTAL EXPENSES
2012	$7,610,625	$5,833,320	$2,946,852	$9,454,819	$25,770,262
2011	$6,960,281	$5,375,005	$2,067,494	$7,921,927	$22,269,484
2010	$6,669,868	$5,388,893	$2,234,020	$8,990,973	$23,243,348
2009	$6,310,293	$5,210,774	$2,271,975	$8,569,389	$22,322,317
2008	$5,871,315	$4,550,204	$2,327,476	$7,253,899	$19,957,909
2007	$4,906,548	$3,888,313	$1,994,856	$6,451,788	$17,208,710
2006	$4,470,687	$3,290,434	$2,114,507	$6,238,085	$16,081,045
2005	$3,939,763	$2,914,828	$2,008,219	$5,739,509	$14,577,734

Appendix B

Football & Academic Spending Data 2007–2012 (Knight Commission on Intercollegiate Athletics, 2014a)

FOOTBALL SPENDING PER FOOTBALL PLAYER

Total football operating expenses, including the cost of scholarships per football player (scholarship and non- scholarship).

2007	2008	2009	2010	2011	2012
WESTERN KENTUCKY UNIVERSITY+96% from 2007–2012					
$26,138	$34,479	$56,237	$47,671	$49,070	$51,160
SUN BELT CONFERENCE MEDIAN+65% from 2007–2012					
$30,961	$32,237	$41,519	$35,757	$43,126	$51,160
FBS MEDIAN+48% from 2007–2012					
$77,819	$80,413	$93,905	$106,053	$102,128	$115,024

Note. Amounts reflect current dollars. Inflationary adjustments can be made in custom reporting.

ACADEMIC SPENDING PER FTE STUDENT

The full cost of education per full-time equivalent (FTE) student. It includes only the direct and indirect costs related to educating students; spending related to other university activities or services is excluded.

2007	2008	2009	2010	2011	2012
WESTERN KENTUCKY UNIVERSITY+36% from 2007–2012					
$9,089	$9,877	$9,774	$10,665	$11,695	$12,405
SUN BELT CONFERENCE MEDIAN+23% from 2007–2012					
$8,431	$9,691	$9,342	$10,012	$10,956	$10,332
FBS MEDIAN+18% from 2007–2012					
$12,195	$13,349	$13,471	$13,628	$13,563	$14,353

Note. Amounts reflect current dollars. Inflationary adjustments can be made in custom reporting.

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YOU AND THE LAW

Concussion Litigation and the Return-to-School Plan

Richard Bomgardner

Concussions and traumatic brain injuries (TBIs) in sports are common themes of discussion among coaches, parents, and students. The spotlight on these injuries has broadened awareness levels within different populations. In 2017, an estimated 2.5 million high school students reported having at least one sports- or physical activity–related concussion and an estimated 1 million students reported having two or more (DePadilla, Miller, Jones, Peterson, & Breiding, 2018). While those numbers are concerning, many concussions are unfortunately not reported (Delaney, Lamfookan, Bloom, Al-Kashmiri, & Correa, 2014; Llewellyn, Burdette, Joyner, & Buckley, 2014; McCrea, Hammeke, Olsen, Leo, & Guskiewicz, 2004; Rivara et al., 2014). However, the effects of a concussion or TBI can have a negative effect on the student's learning potential. The complexity of concussion management strategies on and off the field is being challenged by society with concussion litigation. A brief Internet search on Google revealed multiple states, California, Illinois, Iowa, Michigan, Mississippi, Oregon, Pennsylvania, North Carolina, South Carolina, and Texas, have experienced high school concussion lawsuits. Football, ice hockey, lacrosse, field hockey, and cheerleading were common activities for litigation. While there are state laws and legalized medical standards of care specific to concussion management and return-to-play (RTP), there appears to be little to no regulated education or medical standards for returning a post-concussion student back into the classroom.

Richard Bomgardner is an assistant professor and chair, Department of Human Performance Studies, Wichita State University. Please send author correspondence to rich.bomgardner@wichita.edu

The National Conference of State Legislatures reported within the United States in 2017, less than 10 states have laws requiring return-to-learn (RTL) protocols for students with TBIs. More important, only two states require RTL protocols to be evidence-based as well as provide education for school personnel. Therefore, the majority of states have no legislation to help guide high schools on RTL education programs or protocols. The Concussion in Sport Group (CISG) participating in the 5th International Conference on Concussion in Sport in 2016 recommended an education program be part of the school's RTL plan (McCrory et al., 2017). The CISG, which is comprised of some of the leading concussion experts in the world, stated in their new consensus statements, schools should have within their RTS plan, education that includes concussion "prevention and management for teachers, staff, students, and parents" (McCrory et al., 2017, p. 844). Additionally, the CISG noted that appropriate academic accommodations and support for students recovering from concussions should be part of the education and RTS plan. To further support this area, Zirkel and Brown in 2015 published a legal perspective on K–12 schools and concussions that identified that RTS plans should be designed to provide academic accommodations, support student recovery, and lessen symptom effect on learning. The importance for school personnel to participate in evidence-based concussion education or training programs is apparent. Concussion litigation has mainly centered on management protocols from athletic participation; however, with the mounting literature on RTL and RTS, it could be only a matter of time before litigation is pursued due to decreased academic performance relating to limited accommodations, inadequate RTS plans, and/or educators not understanding their role in academically supporting the post-concussion student.

Decreases in academic performance, problems with readjusting to the classroom, and reoccurring or worsening symptoms in school are some of the difficulties post-concussion students face when returning to the learning environment (Arbogast et al., 2013; Baker et al., 2015; Brown et al., 2015; Carson et al., 2014; Darling et al., 2014; Eisenberg, Meehan, & Mannix, 2014). Cognitive issues relating to difficulty concentrating, focusing, and memory can plague the recovery process. Students experiencing greater levels of cognitive

activity in school have reported longer periods of symptom recovery (Brown et al., 2014; Ransom et al., 2015). Students also encountering challenges with difficulty remembering are 1.8 times more likely to have school-related problems (Baker et al., 2015). Ransom et al. (2015) further identified post-concussion students in high school had more weaknesses in learning skills (e.g., note taking, studying, and completing homework). Different subjects can further complicate the recovery process such as mathematics, science (biology and chemistry), reading, language arts (English), and social studies appear to be the most challenging for post-concussion students (Ransom et al., 2015). In addition to cognitive difficulties, vision insufficiencies are becoming a concern when post-concussion students return to school. Students suffering from post-concussion vision problems are 2.5 times more likely to have academic problems (Baker et al., 2015). Double vision, blurred vision, and eye tracking have been reported to increase significantly after a concussion (Master et al., 2015). Concussion symptoms produced beyond 10 days and 30 days demonstrated significant relationships to vision issues and difficulty concentrating (Swanson et al., 2017). Literature surrounding post-concussion academic, cognitive, and vision difficulties provides a robust argument for schools to have an RTS plan with an education program for school personnel.

It would seem imperative for schools to educate their teachers, coaches, and staff on appropriate accommodations, RTS management strategies, and levels of communication. Exploring discrepancies in classroom management protocols, deficient accommodations, and a general lack of communication within the school could be a framework for potential litigation. The CISG's recommendation that schools have within their RTS plan a concussion education program for teachers, staff, students, and parents would provide a foundation to reduce litigation areas. Education programs or training for school personnel is critical for the RTS process, as the role of increasing concussion knowledge cannot be underestimated. In fact, education support for school personnel has been identified in various literature (Dettmer, Ettel, Glang, & McAvoy, 2014; Dreer, Crowley, Cash, O'Neill, & Cox, 2017; Halstead et al., 2013; Lyons et al., 2017; McAvoy, Eagan-Johnson, & Halstead, 2018; McCrory et al., 2017; Sady, Vaughan, & Gioia, 2011). Concussion prevention,

classroom management strategies, academic accommodations, student supports, and areas to limit symptom production are all formal topics in education programs (McCrory et al., 2017; Zirkel & Brown, 2015).

Professional development activities would provide further opportunities to review the RTS plan, discuss successful academic interventions, and facilitate efficient lines of communication so that school personnel can foster a positive learning environment. However, teachers have limitations in concussion knowledge and training (Dreer et al., 2017; Heyer, Weber, Rose, Perkins, & Schmittauer, 2015). While coaches have annual concussion training, it is not always required for educators in the classroom. In fact, high school principals who have participated in concussion training are not all likely to support concussion training for non-coaching teachers (Heyer et al., 2015). Gaps within the school environment have exposed unmet needs for post-concussion students such as a lack of school policy, academic accommodation barriers, and inconsistencies in communication channels (Lyons et al., 2017). Deficiencies in communication have been reported, which provides concerns in effective RTS management (Dreer et al., 2017; Lyons et al., 2017; Romm et al., 2018). Also, a lack of continued professional development has been shown to contribute to poor outcomes for the post-concussion student (Dettmer et al., 2014).

Schools should be prepared to accommodate the post-concussion student upon RTS. The development of a Concussion Management Team (CMT) within the school has been recommended to facilitate the RTL plan (Centers for Disease Control and Prevention, 2017; Gioia, Glang, Hooper, & Brown, 2016; Halstead et al., 2013; Lumba-Brown et al., 2018; Nationwide Children's Hospital, 2012; Rocky Mountain Youth Sports Medicine Institute, 2011). The CMT involves a representative from the family/student (e.g., parent, guardian, and/or student), medical personnel (e.g., physician, school nurse), and school academic member (e.g., teacher, administrator), as well as school physical activity member (e.g., physical education teacher, athletic trainer), if necessary (Centers for Disease Control and Prevention, 2017; Gioia et al., 2016; Halstead et al., 2013; Nationwide Children's Hospital, 2012; Rocky Mountain Youth Sports Medicine Institute, 2011). The CMT plays an important part in establishing

effective lines of communication, assigning a liaison person or case manager for communication between the parents, teachers, and students. The liaison should be familiar with academic benchmarks or Common Core standards to enable teachers to make proper academic accommodation for the student. Lumba-Brown et al. (2018) recommended the CMT counsel the student and family on gradually increasing the academic duration and intensity as tolerated. Furthermore, the CMT helps develop a learning plan for the student in school to gradually increase workload upon RTS.

Litigation from concussions or TBIs sustained during participation in sports has become a focal point in various athletic levels ranging from youth to professional sports. Although no litigation thus far has stemmed from reduction of post-concussion academic performance due to inefficient school supports, the case could be made if schools do not have a structured and effective RTS plan. Recommendations by the CISG and in the literature on education for school personnel provide a basis for demonstrating concussion knowledge limitations in schools. Furthermore, literature showing post-concussion academic challenges in specific content areas, cognitive deficiencies, and vision problems points to important topics in which concussion education would greatly benefit school personnel and the concussed student. Direct lines of communication, effective RTS policies, and sufficient academic accommodations also strengthen those school supports enhancing the learning environment. Establishing a CMT to facilitate the RTS plan that monitors and tracks student progress, provides interventions, and outlines accommodations will bolster the school's RTS plan for reintegrating the student into the classroom. As new research continues to drive effective policies and strategies in RTS, it is even more critical that schools establish evidence-based RTS policies and education programs to guard against possible concussion litigation.

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