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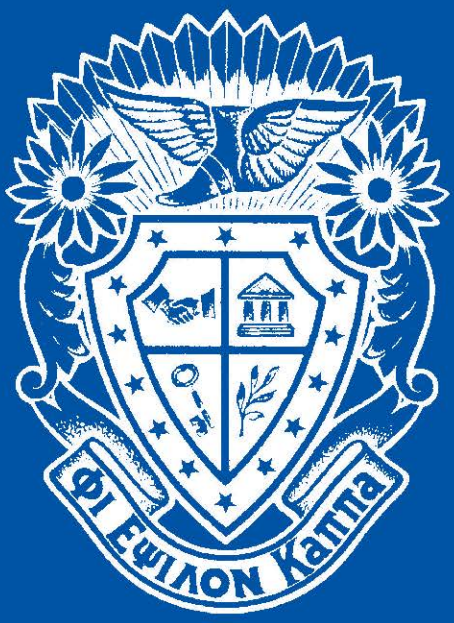

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METHODOLOGY

Effect of a Bicycling Unit on the Fitness of Middle School Students

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Michael D. Merrie, Atyh A. Hadadi

Abstract

Many physical educators today are teaching lifetime sports, including outdoor activities such as cycling. Even though cycling is a low impact exercise that aids stamina and fitness, little is known about additional benefits in other areas including agility, balance, and explosive power. The purpose of this study was to ascertain if there are physical benefits (i.e., static balance, explosive leg power, agility) to students participating in a single bicycling unit in physical education (PE) class. Middle school students in the treatment school rode bicycles during their PE classes for 2 months. Students in the control school did not have access to bicycles during PE classes. Before the bicycle unit began, students in both schools were measured on stork stand with eyes closed, vertical jump, and agility. Students in the treatment school then participated in PE classes that included a bicycling unit, whereas the control school students participated in PE classes that did not include bicycling. Pretest scores were used as covariates, and results showed that students in the treatment group scored higher than students in the control group at posttest on all three tests. Although many schools have begun using lifetime activities in their PE classes, the results suggest that these activities not only may be fun for students but also will help them experience fitness benefits.

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Riding a bicycle can be a fun and invigorating experience for young and old. Throughout history, people have used bicycles as a method of transportation, a way to maintain fitness, and a means of spending quality time with partners or family (Barbour, 2016; Cooper et al., 2006; Menschik, Ahmed, Alexander, & Blum, 2008). The benefits of riding a bicycle have been well documented for adults and include improved cardiovascular fitness, a reduction in risk factors related to disease, and an enhanced feeling of well-being. Gordon-Larson, Boone-Heininen, Sternfeld, Jacobs, and Lewis (2009) found that commuters who cycled to work compared to non–physically active commuters were overall more fit, tended to be less obese, and had more optimal levels of blood pressure, triglyceride, and insulin. Other researchers have reported similar results related to reductions in cardiovascular risk factors, lower blood pressure, and decreased hypertension (Hamer & Chida, 2007; Hu et al., 2002). Additional benefits for adults include lower stress, improved levels of well-being and self-confidence, and reduced tiredness (Appleton, 2011; Boyd, Hillman, Nevill, Pearce, & Tuxworth, 1998).

For a child or adolescent, learning to ride a bicycle can result in an immense feeling of accomplishment second to none (Coulson, 2015). Besides these feelings of accomplishment, other health-related benefits of cycling including body fat reduction, a tendency to be less overweight, and less likelihood of lower back pain have been reported for children (Borrestad, Ostergaard, Anderson, & Bere, 2012; Dudas & Crocetti, 2008; Menschik et al., 2008; Rosenberg, Sallis, Conway, Cain, & McKenzie, 2006; Silva & Lopes, 2008; Sjolie, 2003). According to the President's Council on Fitness, Sports, and Nutrition (2016), over 80% of adolescents do not get enough physical activity to meet the minimum standards for aerobic activity. The American College of Sports Medicine (2012) recommends that children need at least 1 hr of moderate to vigorous physical activity daily combined with 60 min of strength training per week (Centers for Disease Control and Prevention, 2015). A number of school districts throughout the United States have recently implemented in-school bicycle curricula in an attempt to address the growing problem of childhood inactivity. Many of the schools have either fully implemented or have adapted their bicycle curriculum based upon Bikeology (Society of Health and Physical Educators [SHAPE America], 2016). Bikeology

is a bicycle safety curriculum that was developed through the collaborative efforts of the National Highway Traffic Safety Administration (NHTSA) and Shape America. The Bikeology curriculum, which was released in May 2014, includes lesson plans, bicycle skill units, skill assessments, safety instruction, bicycle maintenance, rules of the road information, and a parent's guide to bike safety. NHTSA and SHAPE America developed the curriculum for use by middle and high school physical education (PE) teachers, and the curriculum is aligned with the National Standards for K–12 Physical Education.

Even though much is known concerning the health benefits of cycling for adults and children, little is known regarding the possible gains in balance, explosive power, and agility within youth resulting from participation in a cycling unit in school. Specifically, this study investigated the effect of an in-school bicycle program on the static balance, explosive leg power, and agility in children.

Method

Participants

Forty-one seventh grade students from two urban middle schools in northwest Arkansas served as participants. After institutional review board approval, permission was obtained from school principals and their PE teachers, and each child whose data was used submitted a parental consent form. Students in the treatment school (n = 19; 9 male, 10 female; M_{age} = 12.55) participated in a bicycle unit from March until mid-May. The bicycles were new to the school and were included in the school's PE curriculum for the first time. Students in the control school (n = 22; 10 male, 12 female; M_{age} = 12.68) did not have access to bicycles during PE classes.

Tasks

Modified stork stand (Johnson & Nelson, 1986). With shoes on, participants were instructed to put hands on hips and raise the leg of their choice so that the foot was touching the inside of the opposite knee. After attaining this position, they closed their eyes and the stopwatch was started. Participants were required to keep their plant heel on the ground instead of keeping it raised. The task was ended when any of the following occurred: raised foot was moved apart from opposite leg, hands were moved from hip, plant

foot was scooted to a different position, eyes were opened, or raised leg touched the floor. Two trials were conducted, the second after a short rest of at least 2 min; the longest of the two time trials was recorded in seconds to the hundredths.

Vertical jump. The vertical jump is a simple test of explosive leg power (Nieman, 2011). For this task, participants were first measured for their reach. With their shoes on, they were asked to stand with their side to the wall and reach up naturally without overstretching. This measurement was recorded to the half-inch. Following this, students were instructed to stand directly under the Vertec jumping apparatus (Sports Imports, Columbus, OH), feet shoulder width apart, and knees flexed. Standing with their nondominant side closest to the apparatus, participants were told to swing their arms up and touch the movable markers as high as possible with their dominant hand (Seminick, 1994). This movement was demonstrated by the researcher, but no other instruction was given. The authors calculated vertical jump by subtracting the highest marker moved from students' standing reach. Participants were given a practice jump and two trials, the best of which was recorded in inches to the half-inch.

Agility run (modified Illinois Agility Run, Cureton, 1951). Four cones were set up at 10-ft intervals in the gymnasium. The starting point was the first cone. In the Illinois Agility Run, participants lie prone at the starting line. So that students could focus specifically on moving in and out of cones efficiently, at the starting position in this study, they were required to stand. Participants weaved in and out two of the cones, ran around the last cone, and weaved back around the cones to the starting line. Two trials were given with a short rest of at least 2 min in between. Time was taken in seconds to the hundredths with the fastest time being recorded.

Procedure

Before the bicycle unit began (late February, early March), students in both schools were measured on two trials of the three tasks: stork stand with eyes closed to test balance, vertical jump to test explosive leg power, and agility run to test agility. The better of the two trials in each test was recorded. During the participants' PE classes at each middle school, three stations were set up for the tasks. Before testing, students participated in warm-up and stretching exercises. Participants were split into three groups and rotated

to each station, where they were tested individually. Each class completed the testing in one class period. Students at each school had no other practice on the tests and were given no formal training to help them. Furthermore, these tests were not performed at any time during the study except at pre- and posttest. In fact, they were not told that the testing had anything to do with bicycling. One of the study's authors who was trained in conducting the test through pilot testing administered each test to ensure that the protocols were being followed properly.

Because of weather issues, students in the treatment school participated in their bicycle unit beginning in April. March and early April classes were spent on bike familiarization and safety. Classes met three times a week for 45 to 50 min. Fourteen days were spent specifically on the bicycle unit, during which students rode for the entire class around the campus or in the adjoining neighborhoods on a primarily flat terrain for a minimum of 2 miles/class at moderate intensity. The teacher followed a curriculum created by the Bicycle Coalition of the Ozarks (2016), which progressed students from basic bicycle knowledge, personal safety skills, bike handling skills, and traffic safety, to greater knowledge of the local trails. Quizzes and videos were included in the curriculum. This program was modified from the Bikeology curriculum developed by SHAPE America and the NHTSA. Giant Revel ALUXX bikes (Lewis & Clark Cycling) were used (small and large), but both sizes were equipped with seven gears.

During the time when students were participating in other activities during their PE class, they biked as a warm-up for the first 15 to 20 min. These other activities during that time were archery, softball, and fitness testing. The school district requires fitness testing, but no actual training specifically for the fitness tests was taught. The curriculum during this time was teacher-planned and followed the Arkansas Frameworks for Physical Education and Health (Arkansas Department of Education, 2011) for content.

The control school students participated in a PE class whose activities included tennis, ultimate Frisbee, stunts and tumbling, and softball. They also met every other day for 50 min. This curriculum also followed the Arkansas Frameworks and was teacher-planned. Lesson objectives focused on instruction, drills, and gameplay.

At the end of the bicycle unit and warm-up with bikes (late-May), students at both schools were re-measured on the three tasks following the same protocols as in the pretest.

Treatment of the Data

Prior to the main analysis, a one-way ANOVA was run on the three tasks. It found that students in the two schools scored differently on the tasks. Therefore, the pretest scores were used as covariates in the subsequent analyses. Because of the use of different covariates, each dependent variable was analyzed separately in a one-way ANCOVA. Alpha level was set at .05.

Results

Because of pretest school differences, the pretest scores were used as covariates in each respective analysis. Table 1 shows the estimated means using covariates and the standard error for each task.

Table 1
Means and Standard Errors Posttests for Each Task Based on Estimated Means Using Covariates

	Agility run in seconds		Vertical jump in inches		Stork stand in seconds	
Group	***M***	***SE***	***M***	***SE***	***M***	***SE***
Treatment	6.903	.101	16.411	.436	29.647	3.146
Control	7.257	.093	14.440	.405	18.203	2.824

ANCOVA results showed that students in the treatment group (bicycle group) scored higher than students in the control group at posttest on all three tests: stork stand, $F(1, 35) = 7.18$, $p = .011$; vertical jump, $F(1, 35) = 10.32$, $p = .003$; agility run, $F(1, 38) = 5.76$, $p = .021$.

Discussion

Because no specific studies in the literature were found regarding the effect of a bicycle unit on children's static balance, explosive leg power, or agility, it is virtually impossible to compare the results of other studies with the present findings. However, the authors hypothesized that differences would be found for the control group versus experimental group based upon the inherent value of the activity.

Static balance with a person's eyes closed depends on proprioceptive input from muscles, tendons, and joints, along with information obtained from the vestibular organs. Therefore, they assumed that bicycle riding would naturally stimulate these receptors, ultimately resulting in the child's ability to maintain balance for a longer time. The only related study found in the literature, even though different age group participants (adults) were used, found that those who rode bicycles 1 hr/week experienced improved eyes-open balance and decreased risk of falls when compared to non-cyclists (Rissel, Passmore, Mason, & Merom, 2013). Rissel et al.'s (2013) findings are in line with the present findings. Eyes-open balance, besides relying on vision, also depends on sensory input from proprioceptor and vestibular organs. Furthermore, the ability to control a bicycle and the ability to maneuver quickly and gracefully through an agility course require heavy reliance on balance, weight shift, coordination, and explosive leg power combined with sensory input. This finding may have contributed to the differences in agility scores between the groups. Last, controlling a bicycle and maneuvering through cones (agility) require similar attributes. Both activities rely on the legs, abdominal core, back, and upper body muscles working together to achieve a common goal (Sovndal, 2009). Because people use similar muscles to perform both activities, this may have accounted for differences in agility scores between the groups.

The results of this study were encouraging because of the length of the study. During the 3 weeks of the biking unit and the days when biking was included as a 15- to 20-min warm-up, the students biked about 9.5 hr total. This activity appears to have been instrumental in the static balance, explosive leg power, and agility differences between the two schools. The activities other than biking that were taught at both schools are commonly taught in middle school PE classes. In the future, researchers may consider employing heart rate monitors to also check for moderate to vigorous physical activity. The only measure of cycling intensity was an estimate by the PE teacher. However, the resulting differences in the student scores suggest that the students put effort into the biking activities.

Although many schools have begun incorporating lifetime activities in their PE classes, the results of this study suggest that bicycle riding may be an effective way to improve static balance ability,

explosive leg power, and agility in children. Because the cost of procuring bicycles and protective gear for schools may be prohibitive, the authors recommend that physical educators physical educators seek out grant funding to provide for the cost of the equipment. The potential lifelong benefits for children seem to outweigh the costs of the equipment.

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PEDAGOGY

Effectiveness of the Practice Style and Reciprocal Style of Teaching: A Meta-Analysis

Constantine Chatoupis and George Vagenas

Abstract

The purpose of this meta-analysis was to examine the effectiveness of Mosston and Ashworth's (2008) practice and reciprocal styles of teaching on motor skill acquisition of school-age and university students. A systematic search in bibliographical databases led to the identification of 23 relevant studies published in peer-reviewed journals. Using certain methodological and statistical criteria, we retained six studies for further analysis. We estimated proper effect size statistics for each study and teaching style. Heterogeneity of the effect sizes was almost zero for the reciprocal style and moderate to large for the practice style ($I^2 > 50\%$). Both teaching styles appear to produce large effects, with the practice style (mean d = 1.16) having larger effects than the reciprocal style (mean d = 0.94). This meta-analysis provides an overview and synthesis of relevant studies and highlights both teaching styles for increasing K–12 and university students' motor skill learning. The results are discussed in light of the Spectrum theory.

The Spectrum of Teaching Styles (Mosston & Ashworth, 2008) is a pedagogical theory that provides a solid model for the systematic generation of research questions and for the organization of relevant results. According to Mosston and Ashworth (2008), the Spectrum consists of a continuum of 11 landmark styles. The styles can be

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clustered into either reproduction or production. The reproduction styles include the command style, practice style, reciprocal style, self-check style, and inclusion style. In reproduction styles, the purpose of the instruction is the replication of specific known skills and knowledge. The teacher specifies the subject matter of the lessons, indicates the learning conditions by identifying the teaching style, and defines the criteria for correct task completion. The class climate is one of performing the model, repeating the task, and reducing errors (Mosston & Ashworth, 2008).

The production styles include the guided discovery style, convergent discovery style, divergent discovery style, individual program, learner-initiated style, and self-teaching style. The production styles require students' engagement in cognitive operations, such as problem solving, inventing, comparing, contrasting, and synthesizing. The class climate favors patience and tolerance and individual cognitive and emotional differences (Mosston & Ashworth, 2008).

The transition from one landmark style to another represents certain decisions being shifted between teacher and learner. The decisions are organized into three mutually exclusive sets: (a) pre-impact; (b) impact; (c) post-impact. The pre-impact set contains decision categories such as objective of the lesson, selection of a teaching style, subject matter, class climate, where to teach, organizational arrangements, evaluative procedures, and time (e.g., starting and stopping time). The impact set contains the decision categories of implementing the pre-impact decisions and adjusting them if needed. The post-impact set contains the decisions categories of gathering information about the performance of the learners, assessing performance against criteria, providing feedback to the learners, and assessing the selected teaching style (Mosston & Ashworth, 2008).

This study examined two of the reproduction teaching styles: the practice style and the reciprocal style (the rationale for selecting these two styles is given in the Method section). Because all readers may not be familiar with these styles, an overview of them is given.

The practice style is the first in the Spectrum that involves the student in the decision-making process (Mosston & Ashworth, 2008). Nine decisions of the pre-impact set can be shifted to the learner: posture (how to posture for the task), location (where to

locate in the environment), order of tasks, starting time per task, pace and rhythm (how quickly to perform the task), stopping time per task, interval (the time between two tasks or parts of tasks), attire and appearance, and initiating questions for clarifications (when to ask questions about the task). The teacher makes the rest of the pre-impact set decisions, as well as all of the post-impact set decisions. During practice, the teacher observes the performance of each student, offers him or her individual and private feedback, and is available to answer relevant questions (Mosston & Ashworth, 2008).

In the reciprocal style, learners are organized in pairs with each learner assigned a specific role. One learner is the doer who performs the task and the other is the observer who offers immediate and ongoing feedback to the doer using a criteria sheet designed by the teacher. At the end of the practice, the doer and the observer switch roles (Mosston & Ashworth, 2008). Mosston and Ashworth (2008) argued that certain strengths can be realized in this style of teaching: (a) Learners learn to give feedback to a peer, which results in a higher number of correct responses by the doer because of the increased frequency of feedback provided by the observer; (b) learners learn to give and receive feedback with a peer, which results in an expansion of learner socialization skill; and (c) learners learn to perform and analyze movements by observing the performance of the doer, comparing the performance against criteria, and drawing conclusions about the accuracy of the performance.

In both styles, students make the nine aforementioned pre-impact decisions. However, unlike the practice style, learners in the reciprocal style have to make three additional decisions (i.e., gathering information about the performance of the doer, assessing the doer's performance against criteria, providing feedback to the doer). In addition to the decisions made by the teacher in the practice style, the teacher in the reciprocal style designs the criteria sheet, monitors and communicates with the observer, and offers him or her feedback about the observer's role.

The two teaching styles in question have drawn the attention of many researchers over the years. Byra's (2000) and Chatoupis' (2009) narrative reviews on the Spectrum of Teaching Styles show that the practice and reciprocal styles are effective in promoting motor skill development over time. Some of the skills tested in the reviewed studies were the forearm pass; accuracy in hockey and rifle shooting;

soccer ball juggling; and volleyball spike, passing, serving, and setting. Although the results of these two reviews are valuable to physical education (PE) teachers and researchers, they do not provide the pooling of data among studies that can be analyzed statistically and the summation of the results by means of appropriate statistics (e.g., effect size) used to assess these results.

Table 1
Excluded Studies

Excluded study	Reasons for exclusion	Review paper[a]
Mariani (1970)	Teaching style implementation was not systematically verified	Byra (2000)
Griffey (1983)	Teaching style implementation was not systematically verified; did not contain the necessary statistics to calculate effect size	Byra (2000); Chatoupis (2009)
Virgilio (1984)	Compared landmark objectives of one style against a different style ; did not employ an equivalent group design	Chatoupis (2009)
Golberger & Gerney (1986)	Did not contain the necessary statistics to calculate effect size	Byra (2000); Chatoupis (2009)
Goldberger & Gerney (1990)	Did not employ an equivalent group design	Byra (2000); Chatoupis (2009)
Oosthuizen & Griesel (1992)	Written in a language other than English	Chatoupis (2009)
Harrison, Fellingham, Buck, & Pellett (1995)	Teaching style implementation was not systematically verified; did not contain the necessary statistics to calculate effect size	Chatoupis (2009)
Liu (1997)	Written in a language other than English	–

Table 1 (cont.)

Excluded study	Reasons for exclusion	Review paper[a]
Hein & Kivimets (2000)	Examined reproduction against production teaching styles; teaching style implementation was not systematically verified	Chatoupis (2009)
AlMulla-Abdullah (2003)	Compared landmark objectives of one style against a different style	Chatoupis (2009)
Sadiq Khalid (2004)	Written in a language other than English	Chatoupis (2009)
Abd Al-Salam (2004)	Written in a language other than English	Chatoupis (2009)
Yoncalık (2009)	Written in a language other than English	–
Zeng, Leung, Liu, & Bian (2009)	Teaching style implementation was not systematically verified	–
Hennings, Wallhead, & Byra (2010)	Did not contain the necessary statistics to calculate ES	–
Kolovelonis, Goudas, & Gerodimos (2011)	Teaching style implementation was not systematically verified	–
Chatoupis (2015)	Excluded on statistical grounds (i.e., it represented an outlier)	–

[a]This column indicates which studies the two reviews included.

Given this lack, the question of the effectiveness of the two teaching styles should be readdressed in a manner that statistically combines the results of the relevant studies and makes an objective assessment out of research synthesis. A meta-analytic study can readdress this question by providing a more accurate and valid assessment of a

treatment effect than that provided by narrative reviews (Rosenthal, 1991) and by explaining heterogeneity among the results of individual studies (Egger, Smith, & Phillips, 1997). The validity and the accuracy of the assessment in a meta-analysis are achieved when the researcher identifies, appraises, and synthesizes all of the relevant studies on a particular topic and uses statistical methodologies to derive more objective conclusions than those that typify narrative reviews (Teagarden, 1989; Uman, 2011).

Purpose of the Study

The primary aim of this study was to conduct a meta-analysis to reexamine the effectiveness of the practice and the reciprocal styles on motor skill acquisition (the motor skills tested in the included studies of the meta-analysis are mentioned in Table 2). The present meta-analysis quantifies, summarizes, and presents standardized statistical evidence from all relevant Spectrum studies meeting certain methodological quality levels; it also incorporates evidence from studies not included in the two aforementioned reviews, thus providing a more complete picture on the effectiveness of the two teaching styles.

Based on the two narrative Spectrum reviews and on Spectrum theory, two questions were addressed in this meta-analysis: (a) Will the two teaching styles have moderate to large effects on motor skill acquisition? (b) Given that unlike the practice style, the reciprocal style is designed primarily for developing social and cognitive skills (Mosston & Ashworth, 2008), will the practice style studies yield a larger effect size than the reciprocal style studies?

Method

Identifying Research

The authors undertook a thorough literature search, utilizing valid electronic databases (ERIC, Sport Discus, ISI Web of Science, Google). They searched specific keywords (*Spectrum, teaching styles, practice style, reciprocal style, motor skill*) in different combinations to identify relevant data-based Spectrum research published from 1970 to October 2016.

The first priority of an effective school PE program is to provide children with the motor skills needed to be enthusiastic participants

in physical activities and be inclined to lead later on, as adults, a physically active lifestyle (Rink & Hall, 2008; Solmon, 2003). Therefore, given the educational importance of motor skill development, we focused on studies investigating the effects of the practice and reciprocal styles of teaching on motor skill learning outcomes only.

The intention to include the practice and reciprocal styles in the meta-analysis was dictated by two facts. First, both teaching styles have been investigated more often than any other teaching style from the Spectrum (Chatoupis, 2010a, 2015; Chatoupis & Vagenas, 2017). Thus, the ensuing pool of data would be large enough to provide a source of generalizable and meaningful information and for statistical testing. Second, a systematic literature review on PE teachers' use of teaching styles revealed that the practice and reciprocal styles of teaching are used internationally more often in the classroom than any other teaching style (Chatoupis, in press). Therefore, giving a more comprehensive answer to the question on the effectiveness of the two teaching styles will be important to physical educators.

Only studies published in peer-reviewed journals were considered because the publication of research in a journal includes a peer-review process and that suggests a more unbiased, professional investigation and presentation. Therefore, dissertations and research papers published in books and conference proceedings were excluded. After the completion of the search, the reference lists of the identified papers were also checked for additional relevant studies. This search led to 23 relevant published studies.

Inclusion Criteria

We used several criteria to select studies for inclusion in the meta-analysis. We, thus, retained for further analysis only studies written in English, conducted only in educational settings (schools, colleges), employed a pre–post design, used systematic observation to verify fidelity of teaching styles implementation, and contained proper statistics (e.g., means, standard deviations, and sample sizes) for the calculation of the effect size.

In addition to the above criteria, all included studies had to be free of conceptual flaws that invalidate Spectrum research (Chatoupis, 2010b), namely, noncompliance to Spectrum theory (ignoring the decision patterns and comparing the landmark objectives of one style against a different style), inappropriate style comparison (reproduc-

tion styles against production styles), and inappropriate subject matter selection (e.g., teach dribbling in basketball with the command style).

Selection Strategy

Initially, the titles of all of the identified studies were read to determine their gross relevance to the meta-analysis. Then we reviewed the abstracts to decide which studies met the inclusion criteria. In cases an inclusion decision could not be made by reading just the abstract, we read the full texts. Based on the above criteria, six of the 23 original research articles were included in the meta-analysis (see Table 2).

Data Analysis

To quantify the effects of the practice and reciprocal styles on motor skill acquisition, we employed Cohen's (1988) standardized difference. Cohen's *d* was estimated from the reported means, standard deviations, and sample sizes (Morris, 2008). Individual study statistics included unbiased effect size estimates, associated sampling variances (σ^2), 95% confidence intervals, and *z* scores, the latter as a check for potential outliers.

The calculation of sampling variance for each effect size requires estimating the pre–post correlation or the standard deviation of the difference scores. However, neither of these two statistics is reported in the relevant studies. Therefore, we had to estimate it by means of one of three available methods: (a) impute the variance of change (score difference) as $\sigma^2_{\Delta} = \sigma^2(1 - \rho)$ and then compute the pre–post correlations as $\rho = (\sigma^2_{\Delta} - \sigma^2) / \sigma^2$ (Follmann, Elliott, Suh, & Cutler, 1992); (b) perform a sensitivity analysis using a range of correlation estimates from related studies; or (c) use some plausible approximations of real pre–post correlation values (Borenstein, Hedges, Higgins, & Rothstein, 2009).

Given the difficulty in imputing good approximations of the variance of pre–post change, we chose the second method. Specifically, recalculations from Chatoupis' (2015) and Chatoupis and Vagenas' (2017) studies resulted in pre–post correlation values of 0.707 and 0.775 for the two treatment groups, respectively, and 0.98 for the control group. Also, from similar recalculations from Kolovelonis and Goudas' (2012) study, these pre-post correlation values were

Table 2
Characersitics of Studies Included in the Meta-Analysis (n = 6)

Author (Year)	Journal	Teaching styles	Skills tested	Duration	Research design	Outcome measurements	*n*	Grade
Goldberger, Gerney, & Chamberlain (1982)	*Research Quarterly for Exercise and Sport*	Style B, Style C	Hockey accuracy	1 lesson	PP-EG	Score (points)	96	5th
Beckett (1990)	*Journal of Teaching in Physical Education*	Style B	Soccer ball juggling	1 lesson	PP-EG	Score (points)	120	College (18–22)
Boyce (1992)	*Journal of Teaching in Physical Education*	Style B, Style C	Shooting accuracy	6 lessons	PP-EG	Score (points)	135	College (18–23)
Ernst & Byra (1998)	*The Physical Educator*	Style C	Soccer ball juggling	8 lessons	PP-ECG	Score (points)	60	6th–9th
Kolovelonis & Goudas (2012)	*Educational Research and Evaluation*	Style C	Chest pass accuracy	1 lesson	PP-ECG	Score (points)	48	5th–6th
Chatoupis & Vagenas (2017)	*The Physical Educator*	Style B	Soccer dribbling	8 lessons	PP-ECG	Time (s)	60	5th

Note. PP-EG = pretest–posttest equivalent group (randomization without control group); PP-ECG = pretest–posttest equivalent control group (randomization with control group). Style B is the practice style. Style C is the reciprocal style. PP-EG = pre-post test equivalent group; PP-ECG = pre-post test equivalent control group.

0.60 for the whole sample and 0.90, 0.70, 0.62, and 0.73 for the four treatment groups, respectively (reciprocal style group, self-check style group, sequential use of the reciprocal and self-check styles group, and control group). Thus, we estimated that pre–post correlations in studies dealing with the effectiveness of PE teaching styles are around a median value of 0.75 and may vary between 0.60 to 0.90.

Based on the above results, we then performed a sensitivity analysis using cutoff values of 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, and 0.90 as a fixed range of plausible correlations to calculate the likely range of sampling variance for the effect size of each study (Morris, 2008). We then calculated the mean effect size for each teaching style as Mean $d = \Sigma(d / \sigma^2_d) / \Sigma(1 / \sigma^2_d)$, with d being the effect size and σ^2_d the sampling variance of d. Last, using Hedges and Olkin's (1985) formula, we calculated the sampling variance of the mean effect size as $\sigma^2_{mean\ d} = 1 / \Sigma(1 / \sigma^2_d)$ and the 95% confidence intervals of the mean effect size as 95% CI = Mean $d \pm [(1.96)\sqrt{\sigma^2_{mean\ d}}]$.

The present meta-analysis combined studies that were diverse in sample size, study design, and unit of measurement. Therefore, we performed a test of heterogeneity using Cochran's Q test statistic (Hedges, 1981) and the derived I^2 criterion (Higgins, Thompson, Deeks, & Altman, 2003). I^2 estimates the percentage of total variation across studies that is due to heterogeneity rather than chance, and it can be used to compare meta-analyses of different sizes, types of study, and types of outcome data (Higgins et al., 2003).

Results

Individual and Overall Effect Sizes

Cohen (1988) proposed a 3-point scale of 0.20, 0.60, and 0.80 for small, moderate, and large effect size. Based on these effect size thresholds, our results showed that for all of the studies, the practice and reciprocal styles had a large effect on students' motor skill acquisition (mean $d > 0.80$; see Tables 3 and 4).

Table 3
Descriptive Statistics of Effect Sizes (Cohen's d) for the Practice Style Studies

Study	Unbiased ES *d*	95% CI LL	95% CI UL	*z*
Goldberger et al. (1982)	0.88	0.50	1.26	-2.55
Beckett (1990)	1.01	0.60	1.42	-1.34
Boyce (1992)	1.52	1.10	1.92	3.28
Chatoupis & Vagenas (2017)	1.39	0.80	1.97	2.12

Note. ES = effect size; CI = confidence intervals; LL = lower limit; UL = upper limit. The *z* scores were based on the unbiased ES.

Table 4
Descriptive Statistics of Effect Sizes (Cohen's d) for the Reciprocal Style Studies

Study	Unbiased ES *d*	95% CI LL	95% CI UL	*z*
Goldberger et al. (1982)	0.85	0.22	1.40	-0.78
Ernst & Byra (1998)	0.81	0.60	1.42	-1.13
Boyce (1992)	1.09	0.75	1.44	1.37
Kolovelonis & Goudas (2012)	0.81	0.15	1.47	-1.15

Note. ES = effect size; CI = confidence intervals; LL = lower limit; UL = upper limit. The *z* scores were based on the unbiased ES.

The same results were yielded from the synthesis of all practice and reciprocal style studies (see Table 5). Based on Table 5, it appears that the practice style has a larger effect (mean $d = 1.16$ to 1.14) than the reciprocal style (mean $d = 0.94$ to 0.91) on motor skill acquisition.

Table 5
Descriptive Statistics of Effect Sizes (Cohen's d)

Teaching style	Mean *d*	Median *d*	Variance σ^2	95% CI of *d*
Practice	1.16–1.14	1.15	0.012–0.006	[0.94, 1.37]–[0.98, 1.30]
Reciprocal	0.94–0.91	0.93	0.013–0.006	[0.72, 1.16]–[0.077, 1.06]

Note. These statistics correspond to a series of pre–post correlations ranging from 0.60 to 0.90.

Test of Heterogeneity

Higgins et al. (2003) assigned adjectives of low, moderate, and high to I^2 values of 25%, 50%, and 75%, whereas Perera and Heneghan (2009) argued that an I^2 higher than 50% is deemed to be large enough to question whether combining studies is valid. Based on these practical guidelines, our heterogeneity analysis (see Table 6) showed that the practice style studies had moderate to high heterogeneity, whereas the reciprocal style studies had nearly zero heterogeneity; according to Higgins et al., negative I^2 values are put equal to zero. It is worth noting that none of the computed Cochran's values were statistically significant, which is an indication of consistency in the results of the study.

Table 6
Heterogeneity Statistics of the Meta-Analysis

Teaching style	Cochran's Q			I^2 statistic	
	M	*Mdn*	*p*	*M*	*Mdn*
Practice	6.14–10.85	7.78	0.29–0.05	51.11–72.34	61.42
Reciprocal	1.30–2.70	1.75	0.93–0.75	-130.82 – -10.97[a]	-71.83

Note. These statistics correspond to a series of pre–post correlations ranging from 0.60 to 0.90.

[a]Negative I^2 values indicate zero heterogeneity (Higgins et al., 2003).

Discussion

The purpose of this meta-analytic study was to determine the extent to which the practice and reciprocal styles of teaching had a differential effect on motor skill acquisition of K–12 and college students (the motor skills tested in the reviewed studies are presented

in Table 2). Based on selection criteria, six published studies were identified. All included articles were published between 1982 and October 2016.

The message from the meta-analysis on the effectiveness of the two teaching styles is clear. The practice and reciprocal styles of teaching have definite positive effects on motor skill acquisition. Based on Cohen's (1988) scale, the effect sizes were assessed as large (see Tables 3, 4, and 5). These results are consistent with the findings of the two narrative reviews of Spectrum research (i.e., Byra, 2000; Chatoupis, 2009).

Both reviews found that the two teaching styles in question are effective in promoting motor skill acquisition of K–12 or college students over a period ranging from 1 day to a few weeks. However, these reviews did not undertake a quantification and synthesis of the respective effect sizes per study and teaching style. Therefore, until recently the size of these positive effects was unknown to PE teachers and researchers. The present meta-analysis remedies this lack of knowledge.

The above results are consistent with Spectrum theory, according to which the two styles under study can achieve substantial motor skill gains. Mosston and Ashworth (2008) claim that the practice style provides conditions that foster motor skill learning, namely, decision-making opportunities and opportunities for increased practice time. Also, learners learn motor skills in the reciprocal style of teaching by observing the performance, comparing the performance against criteria, and giving appropriate feedback. It seems that increases in learner achievement are related to the increase of opportunities to respond and provision of specific feedback (Jackson & Dorgo, 2002; Maheady, 1998), which are conditions fostered in the reciprocal style.

Although the practice and reciprocal styles of teaching differ on several points and have been studied in distinct ways, the meta-analysis reported similar results for both styles. However, the effect of the practice style was stronger than that of the reciprocal style (see Table 5). This finding is not without justification. The practice style is ideal for learning the specific task at hand, because of the maximum amount of practice time that this style provides (Goldberger, 1984). On the contrary, although the reciprocal style

provides conditions for learning motor skills, particularly in the early stages of learning and in learning the technique of the skill, the landmark objectives of this style are developing social and cognitive skills (Mosston & Ashworth, 2008).

Although the present meta-analysis contributes to the literature on the practice and reciprocal styles of teaching, it is not without limitations. First, we searched only English language journals, and this may have resulted in missing relevant research. Second, the included studies had been conducted in the United States and in Greece, and this limits the possibility of generalizing the findings to other areas of the world. Third, none of the studies reported effect size, and some of them did not provide the necessary statistics to calculate it. Unfortunately, scholarship's call to report effect size (Franks & Huck, 1986; McBride & Xiang, 2009; Thomas, Salazar, & Landers, 1991) has not been heard by the pedagogical community. Fourth, although random assignments of participants to groups were employed in all included studies, three of them did not use a control group (see Table 2). Fifth, although the meta-analysis indicated that both teaching styles are effective in promoting motor skill acquisition even when the duration of the fieldwork was just one lesson, the retention of such an acquisition remains unclear; none of the included studies collected follow-up information. Sixth, a moderator variable is a factor that can change the strength of the relationship between an independent and a dependent variable (Baron & Kenny, 1986). Such moderators were not considered in this meta-analysis because of the small number of the included studies. Seventh, the variations in the included studies regarding motor skill tested, the study sample (age, ethnicity), study design (duration of fieldwork, use of control group), and unit of measurement illustrate the heterogeneity among studies. Although a test of heterogeneity was computed (see Table 6), Thomas and French (1985) claim that combining studies with such diversity is a common critique of meta-analyses.

In conclusion, our meta-analysis provides a synthesis of practice and reciprocal style research targeting K–12 and college students and highlights the effectiveness of these styles of teaching. Overall, both teaching styles had a large effect on motor skill acquisition, which corroborates the findings of individual relevant Spectrum studies.

The findings of this meta-analysis support further the place of the two teaching styles in the teaching repertoire of physical educators and their role in promoting gains in the psychomotor domain.

Physical educators who are interested in developing their students' motor skill learning are encouraged to use both teaching styles in their daily lessons. Given that the practice and reciprocal styles dominate the classrooms (Chatoupis, in press) and motor skill learning is a major aim of PE at schools (Chatoupis, 2010a), this study augments the importance of teachers being familiar with them and using them in the gymnasium.

Although the practice style is ideal for promoting motor skill acquisition (Mosston & Ashworth, 2008), the results of the meta-analysis also point to the reciprocal style as a viable option for generating large effects in motor skill learning. The reciprocal style is designed primarily for developing cognitive and social skills (Mosston & Ashworth, 2008); the results indicate that physical educators can use it to achieve gains in motor skills, as well. The findings not only support certain tenets of Spectrum theory with respect to the practice and reciprocal styles (e.g., the merit of decision-sharing opportunities for students), but also encourage physical educators to use the two reproduction teaching styles for realizing certain objectives in the psychomotor domain.

Future meta-analyses should include and assess studies written in languages other than English, combine studies that focus on other teaching styles and learning outcomes, and consider possible moderators. The task of conducting meta-analysis becomes easier when the effect size estimate is reported. Therefore, future research should report the effect size or at least provide proper descriptive statistics including the pre–post correlation that is needed to estimate individual study and overall sampling variance, as well as to perform a heterogeneity analysis. Many scholars, as well as the American Psychological Association (2010), have recommended reporting the effect size (Frohlich, Emrich, Pieter, & Stark, 2009; McBride & Xiang, 2009; Thompson, 2009). Also, authors of future studies should indicate if the effects are meaningful according to established criteria (i.e., Cohen, 1988).

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PEDAGOGY

An Examination of Physical Education Teachers' Perceptions of Utilizing Contemporary Music in the Classroom Environment: A Qualitative Approach

David C. Barney and Francis T. Pleban

Abstract

Objectives: *To provide further information regarding physical education (PE) teachers' perceptions of incorporating music in PE lessons and to evaluate the influence of music on the classroom environment using a qualitative approach.* ***Method:*** *Electronic survey interviews were conducted with 26 veteran PE instructors (10 male, 16 female), from 7 states and 24 schools (7 elementary schools, 15 middle schools, 4 high schools). Participant teaching experience ranged from 1 to 25 years.* ***Results:*** *Analyses of interview transcripts revealed four major themes concerning the use of music in the PE environment: (1) classroom management, (2) student learning, (3) class climate, and (4) music as a motivational tool. Two repeating themes within the major theme of classroom management were the assistance of music in starting and stopping class activities. Other classroom environmental factors within the major themes of student learning, class climate, and music as a motivational tool were specific to student focus, the predilection of contemporary music by students in the classroom, and*

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perceived increased motivation in classroom activities by students, respectively. ***Conclusions:*** *Study findings point to the fact PE teachers find music as a helpful tool to assist in class activities. Incorporated during class activities, music may help to create a positive class climate, serving as a tool to help PE teachers manage students and keep them on task.*

One of life's basic enjoyments is listening or hearing music within the context of a person's environment. Regardless of setting, music may be viewed as a constant, either in part or in whole, to the activity performed. Music as it relates to a person's environment also applies in the context of physical activity.

Priest, Karageorghis, and Sharp (2004) created a conceptual framework supporting the effects of music during physical activity. Concepts addressed within the framework were (a) rhythm response, (b) musicality, (c) cultural impact, and (d) association. Rhythm response refers to musical rhythm, most notably tempo. Tempo denotes the speed of music as measured in beats per minute (BPM). Musicality is specific to the response to pitch-related elements such as harmony and melody. Cultural impact refers to how prevalent a specific genre of music is infused within a particular society or social environment. Finally, association references extramusical association, such as emotions, a piece of music may evoke in an individual or group (Karageorghis, Jones, & Low, 2006). This conceptual framework has been established to predict effects of asynchronous (i.e., absent of conscious synchronization between physical movement and accompanying musical rhythm such as background music) motivational music in the environmental context of exercise and sport.

As noted, research has investigated the effects of music in the physical activity setting. Karageorghis et al. (2006) investigated the association among exercise intensity, music tempo, and music tempo preference in college students. Participants were instructed to select their top three artists for listening while treadmill walking at varying levels of intensity. The results suggested participants preferred fast-tempo music, with fast-tempo music associated with increased workload intensity. The investigation of the effects of music on physical activity has been expanded to include the physical education (PE) setting.

Barney and Prusak (2015) investigated the effects of music on physical activity in elementary children during classroom PE lessons. Third, fourth, and fifth grade students participated in two Frisbee and two walking activity lessons. One lesson for both activities (i.e., Frisbee and walking) included music, whereas the other lessons for both did not incorporate music. Findings suggest students were more active, as indicated by step count data, in both lessons with music playing. Additionally, students generally preferred fast-tempo music, and when the fast-tempo music was playing, workload intensity also increased. The relation of music to physical activity in the PE setting was also explored with 106 college students enrolled in four 30-min basketball classes (Barney, Prusak, & Brewer, in press). Two classes played two sessions of 30-min basketball while music played, whereas the other two classes playing two sessions of 30-min basketball with no music playing during gameplay. Pedometers measured individual step counts and time in activity. On average, students playing basketball with music incorporated 370 more steps and were in activity approximately 3 min more than students playing basketball with no music. Investigations point to the potential benefits of music on workload during physical activity. However, reviews suggest limited findings specific to physical educators' perceptions of incorporating music in PE lessons and its subsequent effects to their classes and students.

Harms and Ryan (2012) observed and reported on how music enhances the PE classroom environment. Qualitative observations and interviews of two elementary PE teachers incorporating music within their classrooms were obtained. Physical educators in this study commented on increased student excitement and activity engagement observed in the classes with music playing. The investigators also noted that when music was not being played, there were more off-task behaviors by students in class, findings similarly described by Krystosek (2003). The majority of studies investigating this topic have followed a quantitative approach. Thus, in the PE setting, other factors related to the perceived use of music in the PE classroom may not have been captured quantitatively.

The objectives of this study were twofold: (1) to investigate PE teachers' perceptions of incorporating music in PE lessons and (2) to evaluate the influence of music on the classroom environment.

Method

Participants

Twenty-six veteran PE instructors (10 male, 16 female), from seven states (Arizona, California, Minnesota, New Mexico, Oklahoma, Utah, and Washington) and 24 schools (seven elementary schools, 15 middle schools, 4 high schools) participated in the study. Participant teaching experience ranged from 1 to 25 years. The university institutional review board (IRB) approved the study before implementation. As well, participants provided their informed consent to voluntarily participate, before study implementation.

Instrument

A review of the literature failed to identify an instrument related to physical educators' perceptions of the effects of music on students during PE classes. As such, the investigators constructed a survey from the literature regarding music in PE and discussions with K–12 physical educators. From the literature review, a 13-item survey was constructed. The survey instrument consisted of (1) two statements specific to types of music played during PE lessons, (2) six open-ended statements addressing music played in PE class, (3) one 4-point Likert scale statement (1 = *never*, 2 = *rarely*, 3 = *sometimes*, and 4 = *almost always or always*) asking physical educators how often they played music in certain pedagogical instances, and (4) four demographic statements (Table 1).

Table 1
PE Teachers' Perceptions of Music in PE Class Survey

1. What type of music do you enjoy playing in your PE classes? (**Check all that apply**)

____ Pop	____ Country	____ Jazz
____ Blues	____ Latin American	____ R&B
____ Rock	____ Classical	____ Electronic
____ Dance	____ Melodic	____ Reggae
____ Punk	____ Hip-Hop/Rap	____ Gospel

____ Other _____

____ I do not play music in my PE class.

Table 1 (cont.)

2. What type of music do you like to play in your PE class **to get your students more active**? (Check all that apply)

____ Pop	____ Country	____ Jazz
____ Blues	____ Latin American	____ R&B
____ Rock	____ Classical	____ Electronic
____ Dance	____ Melodic	____ Reggae
____ Punk	____ Hip-Hop/Rap	____ Gospel

____ Other _____

____ I do not play music in my PE class.

3. Music played in PE class assists with classroom management?
   Please explain you answer:

4. Music played during PE lessons assists student learning.
   Please explain your answer:

5. Music improves the classroom climate in your PE class.
   Please explain your answer:

6. Music in PE classes is an effective learning tool.
   Please explain your answer:

7. What benefits, if any, do you feel come from playing music during your PE classes?
   Please explain your answer:

8. In your opinion, do you feel the music affects the student's mood in a positive manner in your PE classes?
   Please explain your answer:

Table 1 (cont.)

9. In your PE classes, how often did you use music in . . .

		Never	Rarely	Sometimes	Almost always or always
a.	Competitive Group Activities	1	2	3	4
b.	Cooperative Group Activities	1	2	3	4
c.	Skills Drills	1	2	3	4
d.	Physical Activity Stations	1	2	3	4
e.	Peer Teaching	1	2	3	4
f.	Using Heart Rate Monitors or Pedometers	1	2	3	4
g.	Gameplay	1	2	3	4

10. How long have you been teaching PE? (**Select one response**)

____ Less than 1 year
____ 1–2 years
____ 3–4 years
____ 5–6 years
____ 7–8 years
____ 9–10 years
____ 10+ years

11. Race/Ethnic Group:

____ White
____ Black or African American
____ American Indian or Alaskan Native
____ Asian
____ Native Hawaiian or other Pacific Islander
____ From multiple races

Table 1 (cont.)

12. What is your gender?	
____ Male	____ Female
13. Which category below includes your age?	
____ 21–29	____ 50–59
____ 30–39	____ 60 or older
____ 40–49	

Content validity on constructed statements was established with three experienced K–12 physical educators. The purpose of having experienced K–12 physical educators review item construction was to assist investigators in readability of items to address attitudes and perceptions of music being played during PE lessons. The instrument was further pilot-tested with four experienced K–12 physical educators who did not participate in the study. The single Likert scale statement was assessed with test–retest procedures (Everhart et al., 2005). The survey was sent electronically to the participants via Qualtrics survey company.

Procedures

Upon IRB approval, a nonprobability sample of convenience was employed for data collection. An introductory e-mail explaining the intent of the study with a link to the electronic questionnaire was sent to all volunteer participants. After review and selecting the "I agree" section of the e-mail, participants provided their informed consent to participate in the study. Surveys were electronically sent on two occasions, with the second e-mail communication reminding those who had not completed the survey. The survey concluded with participants selecting the "submit" button, thus electronically submitting the instrument to the investigators through Qualtrics.

Data Analysis

For open-ended questions, participant responses were correlated for each statement and reviewed to generate preliminary coding categories, with framework analysis methodology for participant responses, as outlined by Check and Schutt (2011). Framework

analysis incorporated the stages of (1) familiarization, (2) thematic, (3) identification, and (4) charting and interpretation (Rabiee, 2004).

PE and Music Content Themes

Investigators read and reread interview transcripts, identifying key themes and phrases. From all survey responses, the most frequent PE and music content themes were (1) classroom management, (2) student learning, (3) class climate, and (4) music as a motivational tool (Table 2).

Table 2
List of Major Physical Education and Music Interview Themes With Subcontent Factors

Major interview theme	Subcontent factors
Classroom Management	• Starting Activities • Stopping Activities • Student Listening Queue
Student Learning	• Student Focus on Learning • Student Comfort With Learning Activity
Class Climate	• Student Preference for Contemporary Music • Creation of a Positive Classroom Atmosphere • Establishment of Positive Student Mood
Music as a Motivational Tool	• Behavioral Reward • Student Engagement • Positive Messaging

Results

Classroom Management

PE teachers commented that music was a positive tool used to assist with classroom management. Repeating themes within the major theme of classroom management were the assistance of music in starting and stopping class activities. Julie stated, "Music is a fun and fairly easy way to get kids to start, stop, and know that when music is playing, it is time for them to move and when it is off, it is

for them to listen to me." Susan stated, "Instead of screaming and being loud to get the class to focus, I stop the music to get attention. The sudden silence of no music gets their attention quickly." Don responded, "Playing music helps to cue the students to start and when the music stops, to stop." Joann said, "When music starts, students start activity. When music stops, students stop and look at me, or students put away equipment and rotate etc. Music make signals instant and students immediately recognize it." Both subthemes highlighted the significance of music as a tool in assisting PE teachers with classroom management, when implemented correctly. Finally, Tyson summarized the theme:

> If implemented correctly, music can be used to manage the classroom by giving the students cues on what to do when they hear the music stop or when they hear the music start. If not implemented correctly, many classrooms can turn into a zone of poor management.

Student Learning

A second major theme emerging from the data was the effect music has on student learning. When responding to the survey statement, participants did not directly state music improved student learning or skill development; however, they emphasized student focus on student learning. Whitney stated, "Students are more focused and are more active; therefore, they get more chances to perform a skill." Paralleling, Julie said, "Students feel more comfortable when music is playing and they are more willing to participate and try new things." As well, other statements included, "Music helps them focus" and "students' focus is better." One concluding statement referencing music assistance in student learning was, "Music can make some activities that aren't the most fun more fun, which helps students participate."

Class Climate

Class climate emerged as a third major theme from the data. Within this theme of class climate, PE teachers observed that students liked and wanted music in class activity. Sally stated, "I believe music has a strong influence over our emotions, so if I'm playing

happy upbeat music, my students are happy and active." As well, Julie said, "Positive music aids in creating a positive atmosphere." Don stated, "Students are often seen dancing or singing to the music. Students are constantly asking me to play music and requesting their favorite songs." Mary said, "The students cheer when a song they enjoy starts playing. They will come up to me and tell me that a particular song is their favorite." When the investigators analyzed the PE teachers responses specific to class climate, words or phrases such as "happy," "happier", "more excited," and "upbeat mood" were used to describe the effects of music on the students. In conclusion, Eric stated, "If a student comes in upset from another class, listening to a song they really like can help change their mood from negative to positive, as they associate the song with happy uplifting feelings."

Motivational Tool

The final major theme surfacing addressed music as a motivational tool. Stephanie stated, "I can excite or motivate students because it is new and exciting." Don said, "Music is a great way to keep kids motivated during activity time. I like to use music as a reward for student behavior." One participant, Julie, incorporated music with her students throughout their year together. She stated, "I use it [music] as a motivating force to keep the students engaged in whatever physical activity we are learning or practicing. I like it and so do my students. I even let them listen on their phones as they run the mile—they move better when music is allowed. I even used a song as my theme this year that sends forth a positive influence for good and that was the message of the song (Carole King's *Tapestry* CD track 5, "Beautiful").

One survey statement asked PE teachers to identify in which classroom lesson they incorporated music and how often they played music in their classes. For this statement, the following classroom lessons listed were (1) Competitive Group Activities, (2) Cooperative Group Activities, (3) Skill Drills, (4) Physical Activity Stations, (5) Peer Teaching, (6) Using Heart Rate Monitors or Pedometers, and (7) Gameplay. PE teachers could choose from the following scaling responses: (1) *never*, (2) *rarely*, (3) *sometimes*, and (4) *almost always or always*. The top lessons for the seven class lessons were Cooperative Group Activities (41%, *almost always or always*), Skill Drills (34%, *almost always or always*), Using Heart Rate Monitors or

Pedometers (28%, *almost always or always*), Gameplay (63%, *almost always or always*), Physical Activity Stations (60%, *almost always or always*), Competitive Group Activities (34%, *sometimes*), and Peer Teaching (28%, *never*, *rarely*, and *sometimes*).

Discussion

The purpose of this study was to investigate PE teacher's perceptions of the effects of music on students during their PE classes. Qualitative results from this study found music to be a positive tool within the PE teacher's classes and lessons. Four major themes arose from PE teachers' responses to the survey statements: (1) classroom management, (2) student learning, (3) class climate, and (4) music as a motivational tool.

When investigating the major themes in more detail, the investigators noted overlap in teacher comments. PE teachers' comments strongly indicate music was a strong motivational tool in PE classes and lessons in creating a climate in which students were comfortable to participate. To note, not all students will feel comfortable participating in an activity that may not be to their liking or ability level. Grolnick, Gurland, Jacob, and Decourcey (2002) stated, "Physical educators must understand the ways in which children's motivation can be fostered. Children need to be in an environment that stimulates that and allows them the opportunity to work at a level of optimal challenge" (p. 271). Based on PE teachers' comments, music created a climate in the class environment in which students felt more comfortable to participate. Don noted, "Students are often seen dancing or singing to the music" that is being played during the class. As well, Steven stated, "I think it helps them to feel comfortable and like they can let some of their reservations go about being a non-athlete or whatever it may be." Accordingly, music can enhance class climate, thus increasing positive outcomes for students. Digelidis, Karageorghis, Papapavlou, and Papaioannou (2014) studied the effects of music on lesson satisfaction and on four types of motivation of high school students. Results indicated that high school students had lower levels of satisfaction with the lessons when no music was played. Investigators concluded that when played during lessons, music created a more favorable atmosphere for students.

PE teachers indicated that when music was played, students were excited to be in the activity, which led to students staying on

task for the given activity. When played during PE lessons, music put students in a position to better learn the participating activity. Along this line, Whitney stated, "Students are more focused and are more active; therefore, they get more chances to perform the skills." Keeping students on task as they participate in activity was a common response among PE teachers. Lund and Tannehill (2005) stated that time on task for students was associated with greater possibilities for learning motor skills. Phil stated, "I don't think music affects learning. It mostly motivates them to participate." Music may act as a persuasive medium to assist students to participate in an activity.

Finally, many teachers alluded that because students were on task with a given activity, there were fewer opportunities for them to misbehave. Thus, PE teachers had minimal classroom management issues. Joe stated, "It seemed the students were more active when music was playing; therefore, they seemed to be more on task and focused on the activity. There was less horseplay with the boys." In Harms and Ryan's (2012) paper, one PE teacher stated that there was more off-task behavior in the classes without music than in the classes with music. Krystosek (2003) also observed that students in classes without music veered off task more often than students in classes with music playing. Related to classroom management, PE teachers identified music as a start–stop signal. Joann said, "When music starts students start activity. When music stops, students stop and look at me, or students put away equipment and rotate etc. Music makes signals instant and students immediately recognize it." Pangrazi and Beighle (2013) suggested that PE teachers use a loud audio signal to start and stop a class. Using music to start and stop students may save time, allowing for more time for activity participation.

Conclusions

The purpose of this study was twofold: (1) to investigate PE teachers' perceptions of incorporating music in PE lessons and (2) to evaluate the influence of music on the classroom environment. The investigators feel that the qualitative findings from this study help strengthen the literature specific to the implementation of music in the PE setting.

The results appear to coincide with a couple of the tenets of Karageorghis et al.'s (2006) conceptual framework regarding music

and physical activity: cultural impact and association. Cultural impact refers to the pervasiveness of the music within society. Repeatedly, PE teachers stated how students asked teachers to play certain songs or to play the music during the class activities. Referencing the association of music, which emotions of a piece of music may evoke, PE teachers continually commented students were "happy" and "excited" when the music was playing.

The study findings point to the fact PE teachers find music as a helpful tool to assist in class activities. With music being incorporated during class activities, PE teachers find that music helps them to create a positive class climate and to manage and keep students on task. While referencing the positive effects that PE teachers commented on when playing music, remember that music is a tool to assist or aid the PE teacher during the lesson. PE teachers must still employ appropriate instructional practices and mentoring when teaching lessons and activities, and use music to help create a positive climate, assist in managing students, and aid in the student staying on task.

Study Limitations

This study represents PE teachers' presiding in the seven states listed. Thus, the findings and conclusions are mostly germane to those environments. This investigation was not intended to apply to all PE class environments, and findings are closely aligned to specific students and to the specific school environment, thus lacking some degree of generalization. Cause and effect relationships cannot be concluded, and additional research on the improvement of the PE environment needs to be continued in purposeful content areas. Utilizing alternative research methods can help researchers to further understand the complex PE environment. Finally, the study findings have the potential to provide practical guidance to educators in PE teacher education programs.

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PEDAGOGY

Greek Physical Education Teachers' Gender Biases in Learning and Teaching

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Abstract

Gender biases have often been observed in physical education (PE) classes, as many teachers adopt a male-biased perspective in teaching and learning. This might affect their evaluation of students' behavior and may lead students to accept and reproduce gender biases in other social contexts. The aim of this study was to examine whether PE teachers in Greece adopt gender biases in teaching and learning, favoring male students. The sample of the study comprised 392 elementary (n = 200) and secondary education students (n = 192) attending typical coeducational schools in Greece (M = 12.56, SD = 1.6). Participants completed the Perceived Physical Education Class Environment With Respect to the Achievement of Boys Questionnaire, which the researchers used to assess students' perceptions of gender inequalities during PE courses. The results revealed that male secondary education students reported higher scores of negative behaviors toward them, as compared to females, as well as compared to students in elementary school. The findings of this study provide valuable information on students' beliefs about gender inequalities in PE courses that may stimulate future research in this area.

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One of the main objectives of education is to develop and cultivate younger individuals (International Primary Curriculum, 2005; National Association for Sport and Physical Education, 2004). However, gender biases and stereotypes have often been observed in school environments (Azzarito & Solomon, 2005; Opotow, Gerson, & Woodside, 2005; Sarvanaraj, Sudarkodi, & Ramalingam, 2012), affecting teachers' evaluation of students' behavior (Tiedemann, 2002), and resulting in students accepting and reproducing them in other social contexts (Subrahmanian, 2005). Hence, it is important to further study gender inequalities in educational settings, as they can influence academic achievement and social development of students (see Guimaraes, 2015).

Physical education (PE) is among the school disciplines in which gender biases are widely evident (Miller & Budd, 1999; Rich, 2003; Sadker & Sadker, 1994; Velija & Kumar, 2009). For example, PE classes have often been regarded as more appropriate for male than female students (Flintoff & Scraton, 2001; Koivula, 2001; Lentillon, Cogérino, & Kaestner, 2006; Scraton, Fasting, Pfister, & Bunuel, 1999). This might have been ascribed to the fact that sports, as well as most activities taught in PE classes, have been characterized as masculine (Klomsten, Marsh, & Skaalvik, 2005). In addition, PE teachers have been reported to use more masculine teaching approaches (Hutchinson, 1995; Napper-Owen, 1994) and more masculine language, such as addressing students as "you guys" irrespective of their gender (Davis, 2000). Moreover, previous studies indicated that PE teachers were asking male students more frequently to demonstrate physical activities, and they were using more gender-biased criteria for grouping students (Castillo, Romero, González, & Carmen Campos, 2012; Davis, 2000; Hannon & Ratliffe, 2007). In this context, relevant studies have shown that PE teachers were providing more positive feedback and attention to male students (Drudy & Úi Cháthain, 2002; Duffy, Warren, & Walsh, 2001) and were interacting less, either verbally or nonverbally, with female students (Castillo et al., 2012; Hannon & Ratliffe, 2007). Furthermore, as Nicaise, Bois, Fairclough, Amorose, and Cogérino (2007) supported, female students were not praised for performance and achievement, but for exerting effort. Moreover, PE teachers were offering less support and

were assigning females lower grades compared to males (Lentillon et al., 2006; Nicaise, Cogérino, Bois, & Amorose, 2006).

Despite the identified differences in PE teachers' behaviors, there is scarce evidence on the perceived experiences of male and female students related to inequalities in PE courses. Macdonald (1990) argued that both male and female students perceived females as not being favored in their interactions with the teacher, whereas Solmon, Lee, Belcher, Harrison, and Wells (2003) reported that female students who perceived an activity as masculine were less likely to feel competent and exert effort. Additionally, class type (coeducational or single-gender) influenced students' perceived competence (Derry & Phillips, 2005; Lyu & Gill, 2011; Slingerland, Haerens, Cardon, & Borghouts, 2014). Recent evidence is in support of coeducational PE classes, showing increased positive interactions and shared experiences between males and females (Beasley, 2013; Hills & Croston, 2012). However, evidence indicates that females demonstrated lower perceptions of competence in coeducational PE classes compared to single-gender classes (Constantinou, Manson, & Silvermann, 2009; Lyu & Gill, 2011; Slingerland et al., 2014). On the contrary, females in single-gender classes reported greater satisfaction with their effort in PE; perceptions of a more supportive environment; more opportunities for participation, learning, and feedback; and better interaction with teachers than did those in coeducational classes (Derry & Phillips, 2005; Hannon & Ratliffe, 2007; Macdonald, 1990; Treanor, Graber, Housner, & Wiegand, 1998).

Furthermore, there is only limited evidence regarding students' perceptions about PE teachers' behavior. Students' perceptions of PE teachers' behavior and feedback, and teacher-initiated climate are particularly important for their learning and performance (Behets, 1997; Fredenburg & Lee, 2001; Shen, 2015). Ryan and Patrick (2001) argued that students' perceptions of their teachers' support were associated with their motivation and engagement. For instance, perceptions about teachers' behavior could determine students' quality of motivation (Amorose & Horn, 2000; Cox & Lavon, 2008; Koka & Hagger, 2010; Koka & Hein, 2003; Treasure & Robert, 2001) and cognitive, affective, and behavioral outcomes from participation in PE courses (Nicaise et al., 2007; Standage, Duda, & Ntoumanis, 2003). Accordingly, gender bias negatively influenced students' perceived

competence in PE and, hence, their motivation in the educational context (Nicaise et al., 2006; Slingerland et al., 2014).

The aforementioned literature indicates that PE is a gender-bias course, and this is evident in measurements of teachers' behaviors and students' perceptions. Past research revealed no differences in males' and females' perceptions of injustice (Lentillon et al., 2006). This finding might imply that students have assimilated the gender stereotypes about the nature of activities in sport and PE. Still, there is only scarce evidence that substantiates this assumption. In line with this, there is only limited evidence with respect to whether students' perceptions are differentiated as a function of gender and educational level (i.e., elementary vs. secondary education). Past evidence indicates that (a) enjoyment in PE courses and perceived competence decline over time for females, but remain constant for boys (Cairney et al., 2012; for motivational differences between the genders toward physical activity, see also Lauderdale, Yli-Piipari, Irwin, & Layne, 2015), and (b) gender differences, in terms of participation and offensive tactical behavior during invasion games, became more evident in classes with older students compared to those with younger ones (Gutierrez & Garcia-Lopez, 2012). However, there is no past evidence regarding students' perceptions about gender inequalities in PE courses. Therefore, the aim of this study was to investigate students' perceptions about gender inequalities in PE courses and, more specifically, to test whether these perceptions are influenced by the students' gender and educational level. Based on prior literature, the researchers assumed that junior high school female students would display higher perceptions of inequality compared to male junior high school students and elementary school students of both genders.

Method

Sample

The researchers used a stratified sampling approach to randomly select four school units from an urban city and a suburban city in Northern Greece. The schools were selected from the official list of schools provided by the Ministry of Education. Based on the location of the selected schools and the description of school principals, all

schools were considered to be typical coeducational schools including students of middle socioeconomic status.

Three hundred ninety-two students were recruited from both elementary schools ($N = 200$, $M_{age} = 11.55$, $SD = .71$) and high schools ($N = 192$, $M_{age} = 13.78$, $SD = .91$). One hundred ninety-six of the participants (50.9%) were girls, 189 were boys, and the remaining seven participants did not report their gender. The students' mean age was 12.56 years ($SD = 1.6$)

Instruments

Demographic characteristics. The demographic questionnaire included items about participant age, gender, level of education, class, and city.

Perceptions of gender equality. The researchers used the Perceived Physical Education Class Environment With Respect to the Achievement of Boys Questionnaire (PPECE-BG; Papaioannou, 1998) to assess students' perceptions of gender equality in PE classes. The PPECE-BG includes 74 items; seven of these items corresponded to PE teachers' negative behavior toward boys (e.g., "The PE teacher prefers to order the boys"), six items represented teachers' focus on the learning of boys (e.g., "The PE teacher informs the boys how to exercise"), five items reflected teachers' encouragement toward the boys (e.g., "The PE teacher encourages the boys"), five items represented the motivation of boys (e.g., "The boys really exercise"), three items reflected autonomy of boys (e.g., "The PE teacher lets the boys to make up their own exercise program"), and three items corresponded to adjustment of the lesson for boys (e.g., "The lesson is cut out for the boys"). Responses were given on a 7-point Likert scale ranging from *always* (1) to *never* (5). Participants responded to the stem "During the physical education lesson...." A composite score was computed for each scale factor, with higher scores demonstrating higher levels of gender equality. Internal consistency was acceptable for all factors ($\alpha > 72$; see Table 1). Papaioannou (1998) used exploratory factor analysis to provide evidence on the factorial validity of the scale. In the present study, the researchers further investigated the factorial validity of the questionnaire with the use of more sophisticated analytical procedures to substantiate the validity of the scale.

Table 1
Means and Standard Deviations of the Study's Variables

		Total sample		Elementary school		High school		Females		Males	
Variable	**α**	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Negative behavior	.72	5.04	1.20	5.31	1.17	4.72	1.16	4.81	1.27	5.28	1.06
Focus on learning	.88	3.17	1.70	2.08	1.07	4.42	1.41	3.02	1.63	3.29	1.76
Encouragement	.86	3.61	1.73	2.71	1.42	4.60	1.49	3.60	1.73	3.58	1.73
Motivation	.84	2.59	1.47	2.15	1.27	3.14	1.52	2.49	1.34	2.68	1.60
Autonomy	.74	4.22	1.71	4.77	1.56	3.62	1.66	4.35	1.67	4.12	1.74
Lesson adjustment	.73	5.38	1.56	5.80	1.39	4.89	1.6	5.42	1.45	5.32	1.68

Note. Cronbach's alpha was calculated in the total sample.

Procedure

Principals of the selected schools were informed of the aim and procedure of the study, and they granted permission for the researchers to perform the study. Parental consent was obtained via a preprint form delivered by students. Parents had to sign and return the form to the class teacher. Students were informed of the aim and procedure of the study, and those who agreed to participate (97%) completed the questionnaire in a quiet classroom under the supervision of a trained research assistant. Students were reassured about the anonymity and confidentiality of their responses. The researchers provided oral and written instructions to enhance the comprehension of the items. The completion of the questionnaire lasted approximately 10 min.

Data Analysis

The researchers conducted six 2 × 2 ANOVAs to investigate the effect of gender (male vs. female) and level of education (elementary vs. secondary) on students' perceptions of gender equality in PE classes. The level of significance was set at .05. The factorial validity of the scale was investigated with confirmatory factor analysis. Due to normal distribution of the data (skewness and kurtosis values were between –1.00 and 1.00), the researchers employed the maximum likelihood method. They used absolute and incremental indices to examine model fit. The comparative fit index (CFI) was used as the main indicator model fit due to its standardized 0–1 range, small sample variability, and stability across various sample sizes (Bentler, 1990; Jöreskog & Sörbom, 1981). CFI scores exceeding .95 indicate excellent model fit, with scores above .90 suggesting adequate model fit (Battin-Pearson, Newcomb, Abbott, Hill, & Catalano, 2000; Bentler, 1990; Yeung et al., 2000). In addition to CFI, the SRMR and the RMSEA were also used to test for goodness of fit, with scores below .08 and .06, respectively, which indicate adequate model fit (Hu & Bentler, 1999).

Results

Preliminary Analyses

Table 1 presents means and standard deviations and internal consistency coefficients. Table 2 shows the Pearson correlation coefficients among the dimensions of the perceptions of gender equality.

Table 2
Analysis of Correlation

Variable	1	2	3	4	5	6
1. Negative behavior		-.27**	-.30**	-.30**	-.03	.27**
2. Focus on learning			.76**	.53**	-.12*	-.16**
3. Encouragement				.57**	.11*	.03
4. Motivation					.13*	-.05
5. Autonomy						.42**
6. Lesson adjustment						

*$p < .05$. **$p < .01$.

Psychometric Properties of the Scale

The results of the confirmatory factor analysis supported the factorial structure of the scale ($\chi^2 = 733.391$, $p < .001$, $df = 358$, $\chi^2/df = 2.04$, NNFI = .896, CFI = .909, SRMR = .066, RMSEA = .057). All factor loadings exceeded the .50 level and were statistically significant at $p = .01$.

Gender Equality, Gender, and Level of Education

To test the effect of students' gender and level of education, the researchers performed six 2 × 2 ANOVAs, one for each of the PPECE-BG dimensions. With respect to teachers' negative behavior toward boys, the findings revealed no statistically significant interaction between gender and educational level, although a significant main effect of students' gender emerged, $F(1, 349) = 13.83$, $p < .001$, $\eta^2 = .03$. Elementary school students scored statistically significantly higher in perceptions of teachers' negative behavior toward boys than did secondary school students, $F(1, 349) = 22.71$, $p < .001$, $\eta^2 = .06$.

Analysis of variance indicated a statistically significant Gender × Educational Level interaction with respect to perceptions of teachers' focus on boys' learning (Figure 1), $F(1, 369) = 8.38$, $p < .01$,

$\eta^2 = .06$. A statistically significant main effect of gender emerged, $F(1, 369) = 8.08$, $p < .001$, $\eta^2 = .02$, indicating that males reported statistically significantly higher scores compared to females. In addition, students in secondary education reported statistically significantly higher scores on teacher's focus on boys' learning compared to those in elementary education, $F(1, 369) = 337.75$, $p < .001$, $\eta^2 = .48$.

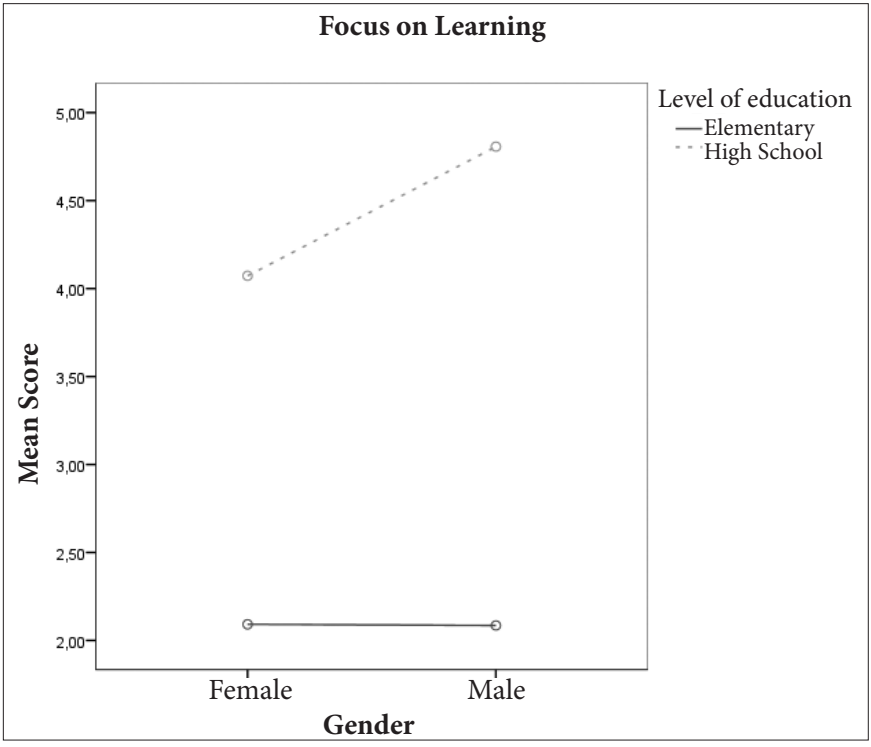

Figure 1. Gender × Educational Level interactions on focus on learning.

Similar results emerged for teachers' motivation toward boys. The analysis indicated a statistically significant Gender × Educational Level interaction (Figure 2), $F(1, 352) = 14.21$, $p < .001$, $\eta^2 = .03$. A statistically significant main effect for gender emerged, $F(1, 352) = 3.93$, $p < .05$, $\eta^2 = .01$, indicating that males reported statistically significantly higher scores than females in motivation. In addition, a statistically significant main effect of the educational level emerged, $F(1, 352) = 48.17$, $p < .001$, $\eta^2 = .12$, indicating that secondary education students reported statistically significantly higher scores of teachers' motivation toward boys than did elementary education students.

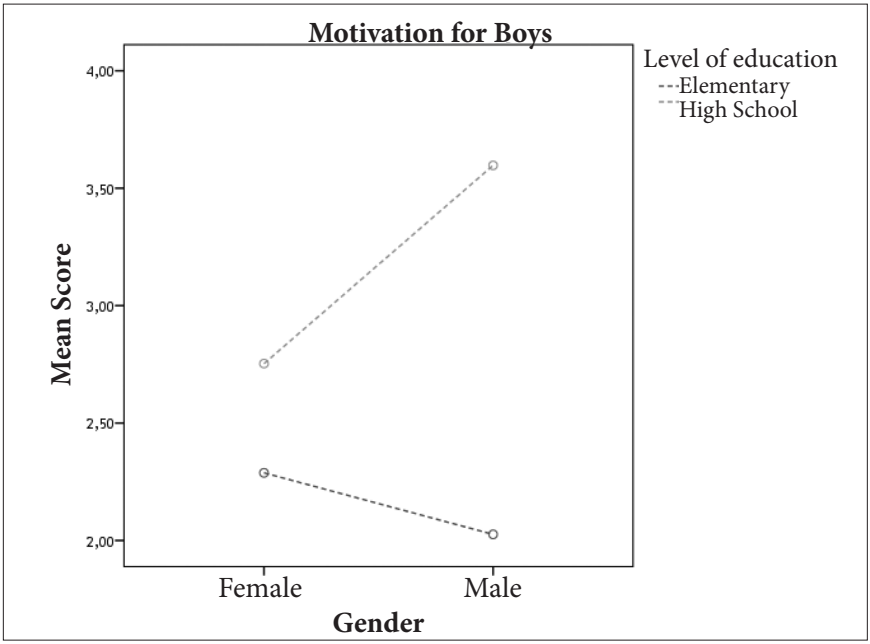

Figure 2. Gender × Educational Level interactions on motivation for boys.

With respect to teachers' encouragement toward boys, the results of the analysis indicated a statistically significant Gender × Educational Level interaction (Figure 3), $F(1, 376) = 10.16$, $p = .002$, $\eta^2 = .02$. A statistically significant main effect of educational level emerged, $F(1, 376) = 10.16$, $p = .002$, $\eta^2 = .02$, indicating that secondary education students reported statistically significantly higher scores of teachers' encouragement toward boys than did those in elementary schools. No statistically significant main effects for gender in this dimension emerged.

The results of the analysis regarding perceived autonomy for boys revealed no statistically significant interactions. A statistically significant main effect for educational level was found, $F(1, 368) = 47.34$, $p < .001$, $\eta^2 = .11$, indicating that elementary school students perceived statistically significantly less teacher-initiated autonomy support toward boys than did secondary school students. No statistically significant gender differences on perceived autonomy were found.

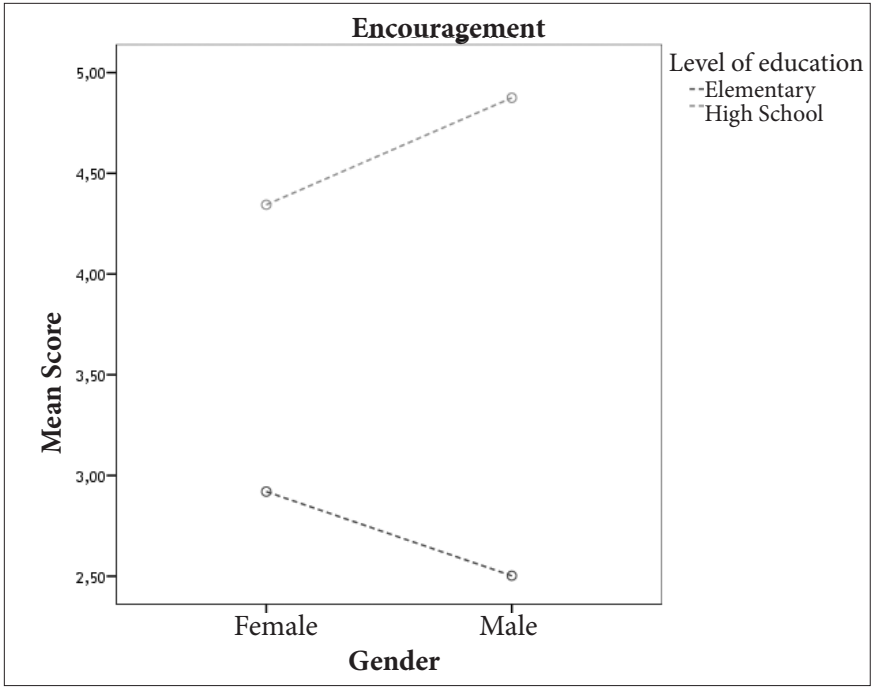

Figure 3. Gender × Educational Level interactions on encouragement of boys.

Similar findings emerged for perceived adjustment of lessons in favor of boys. No statistically significant interactions emerged, except a statistically significant main effect of educational level, $F(1, 361) = 35.89$, $p < .001$, $\eta^2 = .09$, indicating that elementary school students reported statistically significantly less adjustment of the lesson in favor of boys than did secondary education students.

Discussion

The purpose of this study was to examine whether students' perceptions of their physical educator's behavior toward males was affected by gender and level of education. Moreover, the study examined the validation of a self-reported questionnaire concerning students' perceptions of the class environment. In general, the results of the analyses indicated significant interactions of gender and level of education in students' perceptions about their teachers' behavior toward male students. Moreover, with respect to the instrument of the study, the analysis confirmed the factorial validity of the scale.

More specifically, the results of the analyses indicated a significant Gender × Age interaction in three out of six dimensions of teachers' behavior; teachers' focus on the learning of boys, teachers' encouragement toward the boys, and motivation of boys. These findings imply that male students attending secondary education perceive their PE teachers as not focusing on their learning, not motivating them often, and not encouraging them often. These findings indicate that male secondary education students perceive a more negative behavior from their PE teachers than do females and elementary education students. These findings are in contrast to past research showing a differential behavior of PE teachers but in favor of boys (Macdonald, 1990; Nicaise et al., 2007). An explanation for this controversy may lie on the age of this study's sample. This study included students at the onset of adolescence ($M_{age} = 13.8 \pm 0.91$ years), during which adolescents tend to reject "authorities" such as teachers and are affirmed through peers (Cole, Cole, & Lightfoot, 2005; Herbert, 2005). In line with this, adolescence is a time of identity crisis, or "a turning point of increased vulnerability and heightened potential" (Erikson, 1968, p. 96). To resolve this crisis, teenagers try out diverse roles such as being an athlete and a good child, venture to find out what they want to do, and generally try to understand themselves and gain identity through their experiences. If this is the case, it is possible that junior high school students perceived teachers' behaviors aiming to balance inequalities and minimize conflict as negative. Also, they might have interpreted these behaviors as prohibiting them from experimenting with different roles and discovering their own personal identity. This may have been manifested in PE courses in which male adolescents have the opportunity to demonstrate their physical abilities and gain recognition and status, which is significant for their personal identification. Still, more evidence is needed to further support these arguments.

Moreover, educational level (elementary vs. secondary education) was found to influence students' perceptions of teachers' behaviors significantly. Significant main effects in all six dimensions of teacher behavior were found. So far, past evidence with respect to educational level is scarce. Overall, students in elementary education revealed more positive beliefs toward teacher behaviors; teacher behavior was not differentiated in favor of males. These findings can

be ascribed to the fact that elementary school students, compared to adolescent students of junior high school, have not fully developed a gender-based role identity and interact more easily with students of the opposite gender (Cole et al., 2005). In this sense, elementary school students were not sensitive in perceiving a differential way of behaving as a result of the gender. Another explanation may lie on the teaching approaches used by PE teachers in elementary and high school. For instance, McBride (1990) suggested that elementary physical educators demonstrated greater incidents of actual teaching by providing higher levels of instruction and praising their students more. On the contrary, junior high school teachers demonstrated moderate levels of instruction and praised their students less. Thus, it is possible that male and female elementary school students perceive adequate support by their PE teachers and do not experience gender inequalities during PE courses. Nevertheless, further research is needed to clarify the influence of educational level on students' perceptions about teachers' behavior across genders.

Despite the fact that the study provides useful information about students' beliefs on gender inequality, it is not free of limitations. First, the study relied on students' self-reports. Although the questionnaire has been proven valid and reliable, still it reflects students' perceptions that may have been influenced by social desirability or misinterpretation of the items about teacher behaviors. Future studies would benefit from using observation protocols to record teachers' behavior. Second, the study employed a cross-sectional design, which did not allow for causal inferences to be made. The findings of the study are descriptive and provide a preliminary understanding of the phenomenon. Clearly, future studies should employ longitudinal designs that will monitor teachers' behaviors and record whether they can influence students' perceptions. Nevertheless, this is among the first studies investigating students' perceptions of teachers' behavior about gender inequalities in PE courses. The results demonstrate gender and educational level differences with respect to gender inequalities in PE courses and call for further study on the association between teachers' behaviors and students' perceptions.

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PEDAGOGY

Influence of Significant Others on High School Students' Expectancies of Success and Task Value in Physical Education

Skip M. Williams and Windee Weiss

Abstract

This study examined the perceived influence of significant others' beliefs on students' expectancies of success and task value in physical education (PE). PE students (N = 231) between Grades 9 and 12 participated. Multiple regressions examined the influence of perceived parents', teachers', and classmates' beliefs on students' ability expectations and task value. Findings revealed that perceptions of parents', teachers', and classmates' beliefs concerning ability expectations and attainment value were positive predictors of students' own beliefs and attainment value for PE. Perceptions of parents' and classmates' utility value were significant in predicting students' utility value for PE. Higher ability expectancies, attainment value, and utility value were related to lower intrinsic motivation. Higher attainment value predicted lower extrinsic motivation, and higher utility value predicted lower social motivation. In conclusion, perceptions of parents', teachers', and classmates' ability expectancies, attainment value, and utility value positively predicted students' ability expectancies, attainment value, and utility value.

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Physical education (PE) students' motivation to participate in class may come from numerous sources, including their own personal beliefs, perceptions of others' beliefs (social influence), past history, opportunities in which they have succeeded or failed, and talent (Dempsey, Kimiecik, & Horn, 1993; Eccles et al., 1983; Kimiecik, Horn, & Shurin, 1996; Papaioannou & Theodorakis, 1996). Current research suggests that poor participation levels in PE are due to a lack of motivation (Ntoumanis, 2001, 2005; Standage, Duda, & Ntoumanis, 2003; Yli-Piipari, Watt, Jaakkola, Liukkonen, & Nurmi, 2009).

An understanding of PE students' motivational processes is critical for PE teachers to increase participation among students in PE. Through participation in PE, students are afforded opportunities to gain competency in skill and tactical understanding in a variety of activities, increase physical activity (PA) levels, learn responsible and social behavior, and learn to value and enjoy participating in PA (Society of Health and Physical Educators, 2013). In a typical PE class setting, many students approach these opportunities with excitement and willingness to participate, whereas others resist participation. Eccles et al. (1983) questioned why one child would approach an activity with excitement and enthusiasm and another child (same activity) would resist participating. It was believed that the existing achievement theories at the time did not adequately answer or explain why differences exist among participants (Eccles et al., 1983). In the attempt to answer this question, Eccles et al. (1983) created a model that examined two determinants of achievement behavior: (a) expectancy belief and (b) subjective task values. This model (now known as Eccles' expectancy-value model) suggests that achievement behavior (i.e., effort, energy, persistence) is a result of an individual's expectancies for success and task value. These perceptions are often influenced by significant others' perceptions, namely, parents', peers', and teachers' opinions and beliefs concerning the individual's competence and the importance of the activity.

Expectancies for success and subjective task value directly influence individuals' choices and behaviors (Eccles et al., 1983). Expectancy for success is an individual's perceived competence or beliefs about his or her ability in a particular domain (Eccles et al.,

1983; Weiss & Ferrer-Caja, 2002). This construct is an interesting and critical component to understanding the factors that influence achievement behaviors (Weiss & Ferrer-Caja, 2002).

Subjective task value is the importance of being successful in a certain domain or achievement area (Eccles et al., 1983; Weiss & Ferrer-Caja, 2002). There are four types of subjective task value: attainment, interest, utility, and costs (Eccles et al., 1983). In this study, attainment value and utility value were assessed. Attainment value has been defined as the importance of doing well in a particular domain and demonstrating competence (Eccles et al., 1983). Utility value is the perceived usefulness or importance of the task for short- or long-term goals (Eccles et al., 1983; Weiss & Ferrer-Caja, 2002).

According to Eccles' expectancy-value model, several sociocultural and psychological constructs influence task value and expectancies for success (Eccles et al., 1983). The main determinants that effect success expectations and task value are a person's perceptions of task difficulty, goals, self-schemata, causes of past success and failures, and perceptions of socializers' beliefs and behaviors (Eccles et al., 1983; Weiss & Ferrer-Caja, 2002). In this study, attention was placed on perceptions of socializers' beliefs and behaviors, in particular perceptions of parents', peers', and teachers' beliefs. Significant adults such as parents and teachers shape students' attitude, self-concept, and general expectancies of success in three ways (Eccles et al., 1983). First, significant adults are providers of experience. Second, significant adults are interpreters of experience. Third, significant others are role models (Eccles et al., 1983). Peers also have a significant influence on each other in much the same way as parents and teachers. Peers can also be interpreters of experience and can give positive and negative criticism. Also, individuals are always developing new friendships and relationships and seeking peer acceptance.

For example, Eccles Parsons, Adler, and Kaczala (1982) were interested in the influence of parents on children's achievement behaviors in mathematics for students in Grades 5 to 11. In particular, they investigated parents' influence as role models and as socializers. Results indicated that parent role modeling of mathematical skills did not influence their children's performance or expectancies. For expectancies for success, however, parents as socializers influ-

enced their children through their attitudes and beliefs about math abilities. Parents' beliefs were also directly related to the child's expectancies of success, which was even more influential than their child's past performances in math. Thus, it appears as if parents' beliefs are more important to children's performance than the role modeling behaviors by the parents.

Eccles' expectancy-value model has also been tested in the physical domain. Sheldon and Eccles (2005) were interested in the importance of self-perceptions of psychological abilities and perceived competence of tennis players. The study was designed to examine self-perceptions of psychological aptitudes as important predictors of perceived ability or expectancies of success. The research suggested that individuals' past experiences are significantly related to their ability and self-concepts as tennis players. The findings were in accordance with Eccles' expectancy-value model (Eccles et al., 1983) in that individuals' past experiences and self-perceptions influenced their self-concept. This study points out that instructors or coaches should focus on strategy, self-perceptions, confidence, and effort rather than just the specific skill development.

Considerable research has been conducted with the Eccles' expectancy-value model in academic and physical domains (e.g., Eccles et al., 1983; Eccles & Harold, 1991; Eccles Parsons et al., 1982; Fredricks & Eccles, 2002, 2005; Sheldon & Eccles, 2005). However, limited research has been conducted with the Eccles' expectancy-value model in a PE context (Xiang, McBride, & Bruene, 2003, 2006; Xiang, McBride, & Guan, 2004). Xiang et al. (2003, 2006) examined elementary PE students' motivation and parents' beliefs to participate in a running program as part of the PE curriculum. Results indicate that students' expectancy beliefs were a strong predictor of motivation for running. Additionally, parents' value beliefs were related to their child's persistence in running. These findings provide some evidence that students' expectancy beliefs and parents' value beliefs are important in student motivation in PE. Limited research has examined high school PE students' expectancies for success and task value in PE. Therefore, the purpose of this study was to examine the influence of significant others on high school students' expectancies for success and task value in PE class.

Method

Participants and Setting

Participants were PE students (N = 231) recruited from two high schools in the Midwestern United States (n = 33 and n = 198). Male (n = 107) and female (n = 122) students ranged in age from 14 to 18 years (M = 16.47, SD = 1.13). The students were currently in Grades 9 (n = 47), 10 (n = 57), 11 (n = 64), and 12 (n = 61). Two students elected not to indicate grade and gender. The sample consisted of predominantly Caucasian (91.8%) students, with the remaining students describing themselves as Asian American (.9%), Biracial (1.3%), African American (1.7%), Hispanic/Latino (.4%), and Other (2.6%). In addition to participating in PE, the majority of the students (66.2%) currently participated on a scholastic sport team. Permission to collect data was obtained from the university institutional review board, the school administration, and teachers, and parents and students provided written consent and assent.

Instrumentation

Demographics. Students responded to questions related to age, grade, gender, ethnicity, participation in competitive sport, and if PE is an elective or required course at their high school.

Expectancies for success. The expectancies for success scale from the Self- and Task Perception scale assessed students' perceptions of ability in PE (Eccles & Wigfield, 1995). This scale has demonstrated internal consistency among (Eccles & Harold, 1991; Eccles & Wigfield, 1995; Eccles Parsons et al., 1982; Wigfield et al., 1997) students in the first to 12th grades. Five items on the ability/expectancy scale were modified and made applicable to a PE context. Students responded to these items on a Likert scale ranging from 1 to 7 with appropriate words serving as anchors on the scale for each question. The investigators computed the score for each PE student by averaging the scores of the five modified items. Higher values indicated higher beliefs about an individual's competence in PE.

Subjective task value. A modified version of the subjective task value scale from Eccles and Wigfield (1995) and Cox and Whaley (2004) assessed student attainment value and utility value toward PE. The students answered these items on a Likert scale ranging from

1 to 7 with appropriate terms at each end of the scale. Eight questions assessed students' attainment value and utility value. The investigators computed scores for each of the components of task value by averaging the scores of the items in each subscale. Higher scores on each subscale (attainment value and utility value) indicated greater value associated with PE. Reliability for each of the two subscales of subjective task value has been reported greater than .70 (Cox & Whaley, 2004; Eccles & Wigfield, 1995).

Perceptions of socializers' beliefs. A modified version of Eccles and Wigfield's (1995) scale assessed the perceptions of parents', teachers', and peers' expectancies for success, attainment value, and utility value for PE. Past research has shown adequate reliability for this scale (Kimiecik et al., 1996). Thirteen questions assessed students' perceptions of significant others' beliefs. Responses ranged in a Likert scale from 1 to 7 with appropriate word anchors.

Procedures

Once parental consent forms were collected, the primary investigator returned a few weeks later to administer the questionnaire during the participants' PE class. Prior to administering the questionnaire, the primary investigator gave the instructions and reminded the students that this was a voluntary project and responses would not be consider in their PE grade. Students completed the questionnaire away from their teacher and other nonparticipating peers. During and after the questionnaire, the primary investigator was available to answer questions.

Data Analysis

Statistical analysis was conducted using SPSS 20. Preliminary analyses included descriptives, frequencies, reliabilities, and correlations. A series of multiple regression analyses determined the influence of perceived significant others' beliefs on students' own beliefs. Significant others' beliefs were the independent variables, whereas the students' expectancies for success, attainment value, and utility value were the dependent variables.

Results

Alpha coefficients were computed and determined scale reliabilities for all constructs. All scales achieved adequate reliability, with

alphas ranging from .79 to .93 (see Table 1). Mean scores were calculated for each subscale. For the subscales, scores ranged from 1 to 7 on each item. Table 2 shows the means and standard deviations for each subscale (see Table 1).

Correlations were calculated among all constructs (see Table 1). The relationship between the students' ability expectancies, attainment value, and utility value was strong and positive. Thus, students with higher ability expectations for PE also tended to have higher attainment and utility value for PE.

The relationship between students' perceptions of ability expectancies, attainment value, and utility value and parents', teachers', and classmates' perceived ability expectancies, attainment value, and utility value was moderate to high and positively correlated. Thus, students who had higher ability expectancies, attainment value, and utility value tended to perceive their parents, teachers, and classmates as having higher ability expectancies, attainment value, and utility value for PE.

Social Influence on Ability Expectations

A multiple regression analysis determined the relationship between perceptions of significant others' beliefs about ability and students' ability expectations. The predictor variables included perceptions of parents', teachers', and classmates' ability expectancies. A significant relationship emerged, $F(3, 227) = 215.93$, $p < .0001$. For the social predictors, the strength of the relationship was $R = .86$, with the predictors explaining 74% of the variance in students' ability expectancies. Beta weights suggested that perceptions of parents' ($\beta = .45$), teachers' ($\beta = .20$), and classmates' ($\beta = .28$) ability expectancies were significant predictors of students' ability expectations. Thus, higher perceptions of parents', teachers', and classmates' ability expectations predicted higher ability expectancies for the students.

Social Influence on Attainment Value

A multiple regression analysis determined the relationship between perceptions of parents', teachers', and classmates' attainment value beliefs and students' attainment value for PE. A significant relationship emerged for all three social predictors, $F(3, 227) = 78.51$, $p < .0001$, with the strength of the relationship being $R = .71$ and the predictors explaining 51% of the variance in students' attain-

Table 1
Alpha Coefficients, Correlations, Means, and Standard Deviations for All Constructs

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Students' Ability Expectancy	0.88											
2. Students' Attainment Value	0.73	0.86										
3. Students' Utility Value	0.52	0.7	0.83									
4. Parents' Ability Expectancy	0.82	0.63	0.45	0.89								
5. Teachers' Expectancy Ability	0.78	0.69	0.49	0.79	0.86							
6. Classmates' Ability Expectancy	0.79	0.63	0.48	0.79	0.78	0.87						
7. Parents' Attainment Value	0.64	0.67	0.51	0.78	0.65	0.58	0.88					
8. Teachers' Attainment Value	0.42	0.47	0.32	0.50	0.65	0.43	0.51	0.80				
9. Classmates' Attainment Value	0.42	0.52	0.49	0.41	0.47	0.61	0.49	0.35	0.80			
10. Parents' Utility Value	0.54	0.63	0.75	0.59	0.55	0.54	0.74	0.39	0.51	0.90		
11. Teachers' Utility Value	0.44	0.46	0.42	0.51	0.57	0.43	0.52	0.63	0.28	0.57	0.87	
12. Classmates' Utility Value	0.38	0.52	0.61	0.37	0.42	0.51	0.44	0.27	0.77	0.68	0.37	0.86
M	5.42	5.10	4.20	5.62	5.47	4.99	5.43	6.13	4.12	4.44	5.65	3.60
SD	1.05	1.34	1.37	1.08	1.09	1.19	1.26	0.95	1.39	1.37	1.11	1.36

Note. All correlations were significant at the $p < .05$ level. All scales were scored on 7-point Likert scale. Alpha coefficients can be seen along the diagonal.

ment value. Beta weights suggested that perceptions of parents' (β = .48), teachers' (β = .14), and classmates' (β = .24) attainment value of PE were the significant predictors of students' attainment value. Perceptions of parents' attainment value emerged as the strongest predictor. Thus, higher perceptions of parents', teachers', and classmates' attainment value for PE predicted higher students' attainment value for PE.

Social Influence on Utility Value

A simultaneous multiple regression analysis determined the relationship between perceptions of parents', teachers', and classmates' utility value for PE and students' utility value for PE. A significant relationship emerged for two of the social predictors, $F(3, 227) = 105.3$, $p < .0001$. The strength of the relationship was $R = .76$, with the predictors explaining 58% of the variance in students' utility value for PE. Beta weights suggested that perceptions of parents (β = .63) and classmates (β = .19) were significant predictors of students' utility value. Thus, higher perceptions of parents' and classmates' utility value for PE predicted higher students' utility value for PE.

Table 2
Regression Analysis Summary for Social Influences Predicting Students' Ability Expectancy, Attainment Value, and Utility Value

Variables	Parents β	Teachers β	Classmates β
Students' Ability Expectancy	0.45	0.2	0.28
Students' Attainment Value	0.48	0.14	0.24
Students' Utility Value	0.63	NS	0.19

Note. NS = not significant.

Discussion

The purpose of this study was to examine the influence of significant others on high school students' expectancies for success and task value in PE class.

Student Predictors of Attainment and Utility Value

As hypothesized, students' perceptions of attainment value and utility value were positively related to students' ability expectancies. Overall, when students' perceptions of attainment value and utility value were high for PE, they tended to also have high expectancies for success for PE. In a similar study, Papaioannou and Theodorakis (1996) examined PE students in junior and senior high school between the ages of 14 and 17. The results revealed that higher attainment value or interest, along with higher utility value or usefulness for the lesson, leads to higher participation in the lesson. Although participation and behavior changes are different than ability expectancies, one could argue that if a student continues participating he or she might have higher ability expectancies.

The results of these studies suggest that perceptions of students' attainment value and utility value in the physical domain affect what students believe about their own ability expectancies. With regard to the current study, if students continue to learn that PE is important and useful in their lives, then they will believe they are competent to perform certain skills in PE.

Social Predictors of Ability Expectations

The second hypothesis was also supported in that students' perceptions of parents' and teachers' ability expectancies positively predicted the students' ability expectancies. Additionally, parents emerged as the most important predictor. Another finding that emerged, that was not hypothesized, was that perceptions of classmates' ability expectancies also positively predicted students' own ability expectancies. Overall, the greater the students' perceptions of parents', teachers', and classmates' ability expectancies or perceived competence in PE, the greater the child's perceived competence in PE.

Similar to the current study, Eccles Parsons et al. (1982) examined parental influence on their children's achievement self-concept and beliefs through parental role modeling and parents as socializers. Results indicated that parents' perceptions and expectations for their children were related to their children's perceptions and expectations of their parents' beliefs. They also found that parents' expectations of success were more influential than their children's

past performances. Thus, children were influenced more by their parents' attitudes toward their success than their own past performances. Similarly, in the current study, PE students who perceived that their parents held high ability expectations for them in PE also had high ability expectations for themselves. Also, Fredricks and Eccles (2005) determined that parents' competence beliefs were significantly more influential on their child's perceived competence, value, and participation than was role modeling. Thus, when parents' competence beliefs are high for their children, the children's own competence beliefs are high.

Babkes and Weiss (1999) also found similar results with youth soccer participants. Children who perceived that their parents had positive competency beliefs also had high positive competency beliefs for themselves. The children also had higher involvement and enjoyment for soccer participation. Additionally, Allen and Howe (1998) discovered that athletes who had high ability and received less corrective feedback for mistakes had higher competence abilities. This finding suggests that feedback from coaches influences individuals' self-perceptions of competence abilities. In relation to the current study, when teachers' competence beliefs are high for their students, this probably influences students' assessments of their own ability.

The results of these studies suggest that parents', teachers', and classmates' ability expectancies for success in the physical domain affect what students believe about their own abilities. With regard to the current study, it seems that if parents, teachers, and classmates are encouraging and positive with PE students that this could increase students' competence beliefs in PE. Therefore, it is important that PE teachers provide positive feedback to their students along with a positive learning environment. For example, teachers need to promote good sportsmanship among all students during a PE lesson and individual feedback to all students. Teachers can also involve parents with PE through monthly newsletters that inform parents of what is happening in PE class and provide fitness tips for parents. Additionally, a monthly progress report could be given to the parents.

Social Predictors of Attainment Value

The third hypothesis proposed that perceptions of parents' and peers' attainment value would positively predict students' level

of attainment value for PE. Again, this hypothesis was supported. Additionally, parents emerged as the most important predictor. Another finding that emerged, that was not hypothesized, was that perceptions of teachers' attainment value also positively predicted students' attainment value for PE. Overall, the greater the students' perceptions of parents', teachers', and classmates' attainment value in PE, the more likely students were to feel that it was important to do well in PE.

Babkes and Weiss (1999) concluded that what children perceive about themselves is how they perceive their parents feel about them. Thus, it appears as if what parents think, rather than what parents claim to think, is more important to children. In the current study, students who felt that doing well in PE was important to their parents also felt doing well was important. Similarly, in Eccles et al. (1983), math students' perceptions of the importance and value of math were predicted by their parents' beliefs. This was also true in the current study in relation to PE.

Overall, when parents, teachers, and peers place a positive emphasis on enjoyment, competence, and doing well in a particular domain, the student or athlete also feels the importance to do well. Therefore, it is critical that parents feel that PE is important. Past experiences parents have had in PE could influence their opinions. The best way a teacher can persuade parents that PE is important is by involving them and expanding their knowledge of the importance of PE. For example, the teacher could send home flyers with fitness tips and the importance of being physically active. Teachers could offer once or twice a month an open gym that has a guest lecturer to speak on important aspects of PE or fitness, with an opportunity to work out and use the high schools facilities after the lecture. For peers, teachers need to make sure to teach in each lesson the importance of applying the skill or lesson objective to students' daily lives. Also, the teacher must get every student involved and enthused about the subject being taught. This can be obtained through careful and thoughtful lesson planning.

Social Predictors of Utility Value

The fourth hypothesis proposed that perceptions of parents' and teachers' utility value would positively predict students' level of utility value in PE. This hypothesis was partially supported. Results

revealed students' perceptions of parents' and classmates' utility value positively predicted students' utility value for PE. Surprisingly, results also revealed that perceptions of teachers' beliefs had no influence on the students' utility value of PE.

The results of parents' and classmates' utility value positively predicting students' utility value could have occurred for several reasons. First, the age of the students could have played a role. Adolescents are highly influenced by their peers. Students want to be accepted by their peers and are willing to accept their peer beliefs to become part of a peer group or to make friends. Again, not surprisingly parents were the strongest predictor of utility value. The students have lived with their parents their entire life and the majority of them have acquired the same beliefs. What was surprising was that the teacher had no influence on students' utility value for PE. Assuming that a teacher places the greatest emphasis on the usefulness of PE in the students' lives, this could have occurred because the teacher might teach in a way that the students do not see how to apply the skills taught in class to everyday life and how skills learned in PE will be useful in the future. Perhaps teachers are just teaching skills and activities. Another possible reason could be that students see the teacher as just rolling out the ball or playing basic games such as basketball, softball, and football, rather than teaching a quality curriculum that involves the cognitive and affective domains. Another reason could be that all PE teachers probably feel that PE is useful, thus teachers' responses to perceived utility value had little range or variance.

These results suggest that students are influenced by what they perceive parents and classmates feel is important. Teachers should focus on involving the parents in PE. Additionally, teachers could involve parents by providing opportunities for the parent and child to work out together such as an open gym time during the week or to get involved in community recreation events.

Conclusions

In conclusion, the findings of this study suggest two key points. First, students' ability expectancies and attainment value could be predicted based on perceptions of parents', teachers', and classmates' ability expectancies. Second, students' utility value could be predicted based on perceptions of parents' and classmates' utility value.

Based on the findings of this study, some recommendations have been made for future studies and PE professionals. First, further studies should examine motivation and social influences in the PE setting in other locations throughout the nation. Second, PE teachers should find methods to enhance the PE students' perceptions of the usefulness and importance of PE. Third, PE teachers should find ways to involve parents in the PE program as much as possible. Fourth, this study was conducted in two small middle-class, Caucasian, rural high schools. Therefore, further studies into the effect of demographic differences (e.g., race, socioeconomic status, gender, and age) on PE influences may be beneficial.

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PEDAGOGY

Perceptions of the Effect of Recess on Kindergartners

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Abstract

Time spent in the outdoors has been proven to benefit individuals of all ages mentally and physically. For example, exposure to nature reduces stress levels, induces relaxation, and provides Vitamin D. Prior research has linked free play outdoors to helping elementary children focus better in the classroom, reducing symptoms of attention deficit hyperactivity disorder, reducing the risk of nearsightedness, and producing happier, healthier children. As result of various legislative acts, school districts have felt more pressure to increase academic performance, oftentimes reducing or eliminating recess. This study extends prior research by focusing on parent, college student, and teacher perspectives on how important play, such as recess, is to them as a parent, student, and/or educator. The findings indicate that all of the focus groups perceive recess to be highly important for the many health, social, and behavioral benefits.

Children are experiencing more rigorous academic requirements beginning as early as kindergarten. Standardized tests have become a mainstream focus for K–12 institutions, and the entry-level requirements for a 5-year-old starting kindergarten have become a three-page exam. With these testing requirements to keep up with, schools have felt pressure to meet testing mandates handed down

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by the state, at all costs. This pressure often leads to schools omitting activities not perceived to enhance students' testing abilities, including a decrease in the time for active play and recess. There are many benefits beyond physical health that recess and free outdoor play offer for children (American Academy of Pediatrics, 2013). For educators and parents, this is a topic for conversation and should not be disregarded (Samuels, 2015).

To gain insight on the perceptions of recess, the investigators conducted a series of interviews and surveys. The questions asked were selected to determine how being in the outdoors affects personal and perceived behavior, as well as to determine the perceived importance that spending time outdoors holds within each group involved in the study. The investigators interviewed three groups of subjects: parents of kindergartners, preschool and elementary school teachers, and college students and young professionals who participated in recess in kindergarten. This study suggests recess offers many benefits for kindergartners, including improved physical health.

Literature Review

Over the past few decades, childhood has transitioned into the majority of time spent indoors. Many small children are restricted to their outdoor playtime and possibilities because of traffic-heavy neighborhoods. The National Wildlife Federation (NWF) reported "that the average child gets as little as 30 minutes of unstructured outdoor play, but spends seven hours using screens" (Anderson, n.d., para. 3). Obesity statistics, numbers of attention deficit hyperactivity disorder (ADHD) diagnostics, and depression have all hit at alarming rates in children (Delate, Gelenberg, Simmons, & Motheral, 2004). "The United States has become the largest consumer of ADHD medications in the world; and pediatric prescriptions for antidepressants have risen precipitously" (National Wildlife Federation, 2010, para. 1).

In the United States, 1 in 3 children are obese (Centers for Disease Control and Prevention [CDC], n.d.). Outdoor play builds healthy bodies and increases fitness abilities. Time spent outdoors increases levels of Vitamin D, which helps protect from bone problems, heart disease, diabetes, and other health risks (National Wildlife Federation, 2010). A study conducted in China linked extra playtime outside to reduced rates of myopia (nearsightedness) in chil-

dren (Wu et al., 2013). "Children who play outside are happier and healthier" (Anderson, n.d., para. 4). Natural settings have effectively been shown to reduce ADHD symptoms, and "schools with environmental education programs score higher on standardized tests in math, reading, writing and listening" (National Wildlife Federation, 2010, Mind section, Bullet Point 2).

The increasing academic demands for early elementary grades, specifically kindergarten, have motivated some administrators and teachers to instill and continue with the traditional play for children that "many classrooms around the country are phasing out elements that look most like play—for example, puppet theaters and water tables—in favor of a focus on whole-group work and literacy" (Samuels, 2015, para. 5). Bassok, Latham, and Rorem (2016) reported that 30% of educators believed children need to learn how to read in kindergarten. In 2010, 80% of educators believed that children should learn how to read in kindergarten. An increase also occurred in educators over the same period who believed that parents need to teach the alphabet to their children before their children enter kindergarten. Bassok asked teachers if they had specific activity places in the classroom. The chances of having a

> water- or sand-table area fell from 49% to 25%. The presence of "dramatic play" areas fell from 87% to 57% . The likelihood of having a science or nature area fell from 64% to 42%. And the likelihood of having an art area dropped from 92% to 70%. (Samuels, 2015, Rising Demands section, para. 4)

Bassok did not state, however, that all of these changes in the kindergarten classroom are necessarily negative. She indicated that the academic work simply needs to be captivating to the children (Samuels, 2015).

A qualitative study was conducted in Denmark regarding the importance of recess for school-age children (C. Pawlowski, Andersen, Tjørnhøj-Thomsen, Troelsen, & Schipperijn, 2016). The analysis was guided by the lifeworld "existentials" lived space, lived body, lived time, and lived relations. These essentials were used throughout the analysis for consistency purposes. The youth who were physically active wanted their recess time to be in the classroom and were opposed to being physically active outdoors. Because

the least physically active students were overweight, they chose to do less physical activity and instead focused their physical activities on reading, painting, and listening to music, which involve no physical movement. Their time of recess or free time was described as hanging with friends and building relationships (C. Pawlowski et al., 2016).

Datar and Sturm (2004) found that offering 1 hr of physical education in first grade significantly lowered the body mass index of female children. The children were observed engaged in walking, sport games, outdoor physical activities, dancing, home physical activity, fitness, games with physical activity, and swimming. The youth were observed during structured physical activity time and during recess for 3 to 7 days. Results showed that the children burned more calories during recess time than during their physical education class. The decline in physical activity on the weekends was linked to less family physical activity. Datar and Sturm noted that an increase in activity levels during the weekday is associated with teacher-led physical education classes.

A. Pawlowski (2016) discussed the benefits that Eagle Mountain Elementary in Fort Worth, Texas, is seeing from adding additional recess time to the school day. Before this year, the school day only consisted of one 15-min recess for kindergarten and first grade for the day. As an experiment, school administrators added three additional recess times throughout the day. The school now offers two 15-min recess breaks in the morning and an additional two in the afternoon, for a total of four throughout the school day. A professor from Texas Christian University who helped to implement this experiment at Eagle Mountain Elementary hypothesized that by participating in these four "reboot" times throughout the day, the students will perform better in the classroom (Rethinking Recess section, para. 2).

After five months, the teachers and parents indicated they were starting to see the benefits of the additional recess time. At first, teachers were hesitant to give up additional instructional time throughout the day. However, with the benefits they were seeing in their students, including improved attention in class, improvements in following directions, and reductions in disciplinary issues, they began to feel more positive about the experiment. In addition, par-

ents witnessed benefits extending beyond the classroom. Because of these benefits, school administrators plan to expand four recess periods to more grade levels (A. Pawlowski, 2016).

After the passing of the No Child Left Behind Act of 2001, many schools began to experience pressure to perform, and one way for schools to find more instructional time was to eliminate recess time in the school day. More recently, momentum has swung back in favor of recess as part of the school day because of the link between physical activity and learning (Adams, 2011). Recess is a local school decision, with increased state and district mandates requiring a minimum number of minutes of recess per day in schools. Siedentop (1999) argued that although the attitude of young people toward physical activity can be modified, this requires a three-pronged strategy that coordinates efforts with the school, family, and community. This strategy encourages children to become physically active (Siedentop, 1999).

Method

The investigators used convenience sampling to select participants and employed surveys to establish a baseline. A Survey Monkey link was sent via e-mail to the participants, and the investigators viewed the data online through a Survey Monkey log-in. Participants consisted of kindergarten teachers in Kentucky and Tennessee; parents of preschoolers and kindergartners in Texas, Kentucky, and Tennessee; and college students from two postsecondary institutions in Kentucky. The investigators created these questions to obtain data revealing the participants' perceptions about the benefits of recess. Each survey participant answered three questions:

- How does active time outside benefit an individual's mood and performance?
- What positive effects on behavior do you see in students after recess?
- How important is outdoor play/recess for children during their school day?

Following the three main questions, the survey allowed participants to give open-ended responses to expand on their responses. Following the survey phase, the investigators conducted in-depth interviews with nine of the 16 participants who completed the sur-

vey. In the interviews, conducted by phone or in person based on location, the investigators asked subjects to expand on their survey responses.

College students, teachers, and parents discussed the benefits of recess affecting mental, physical, social, and academic performances. Participants from each group stated that recess was either important or very important by answering the question, how important is outdoor play/recess for children during their school day? Subjects emphasized the importance of recess for kindergarten students. Out of 16 survey participants, 13 ranked recess as highest importance, whereas three participants ranked it as important. None of the participants chose neutral or not important.

College Student Trends

Surveys and interviews were completed by college students who were sophomores and juniors and had participated in recess as kindergartners. The college students agreed that recess played an important role in ensuring that they excelled in the classroom at their fullest potential. The students collectively agreed that recess alleviated stress and excess energy, which could have hindered students' focus in the classroom.

The students perceived a positive effect of recess on children. As a whole, the children behaved more calmly, focused more in class, interacted with one another and continued in detailed imaginative play rather than sitting alone or being unproductive, were reenergized, were in a better mood, and were less irritable. With these characteristics, students were more focused in the classroom and less disruptive. The participants reported that when they did not engage in recess, they were hyperactive and talkative. After recess, they were more relaxed and ready to continue the rest of the school day. The college students perceived that recess benefited them in kindergarten and should be granted to students today.

Teacher Trends

For the surveys and interviews that were completed with teachers from preschool, kindergarten, and first grade, the overall agreement was that recess beyond 15 min/day resulted in many positive effects that could be observed in their classrooms. All of the teachers who were interviewed shared the same opinion that it is difficult for

students to sit in a classroom for 7 hr each day and maintain their focus without some sort of energy release through movement.

The specific trends that were noticed among the teachers about the benefits included an overall better mood and the ability to focus more easily in the classroom. The interviewed teachers had very young students, and all of them stated that younger students have a harder time staying focused in class than older students. Therefore, these students need more opportunities to get out of their seats and participate in some physical activity to maintain their focus throughout the school day. All of the teachers also stated that the students have a more positive attitude throughout the school day when they have outside physical activity. More than one teacher admitted that they dread rainy days and the winter months when they know the class will not be able to go outside, because it negatively affects the students' overall moods.

Some of the specific positive effects for the students after recess that were trends among the teachers included calmer, more relaxed students experiencing an easier time staying seated. Several teachers also mentioned the social skill building that happens during recess for young students. Recess gives the students time to learn conflict resolution, sharing, and problem-solving skills that are necessary for student success.

Parent Trends

After surveying and interviewing parents, the investigators found an overall general consensus that parents want more recess and find it vitally important in their children's lives. Common words and ideas that parent's used throughout the survey and interview process were *happier, more focused, alert,* and *refreshed*. One parent stated, "Free and creative play is crucial for development and social skills."

When parents were asked about how time spent outside benefits mood and performance, they responded that the outdoors positively affects attitude and makes individuals happier. One parent stated, "Time away from the classroom can foster creative thinking when returning to problems to solve in a classroom. Also, sunshine and the great outdoors can lift anyone's spirit." Others focused on the need for Vitamin D, fresh air, and cardiovascular health benefits from physical play. They discussed the importance of having social

time for children to be able to problem solve on their own and interact with their peers. One parent discussed how "regular exercise and being outdoors enhances productivity by allowing students and teachers to take 'brain breaks' and recharge."

When asked about positive effects their children had after having time to play in the outdoors, parents frequently responded that their children were happier, were refreshed, were "better able to follow directions and self-regulate their behaviors and emotions," and had a "renewed ability to focus." There were statements focusing on the time spent outside helping children to learn more effectively and in a more positive mind-set after their brain had a break time to refuel. One parent stated, "Play provides a wonderful opportunity for students to engage with their friends in free play. On the playground real problem solving happens!" Another parent said, "Students learn social skills as they interact with kids and problem solve, they get exercise in order to develop a healthy lifestyle, and research has proven that brain breaks enhances the brain's ability to focus better and learn more!"

Discussion

This research is limited by the number of participants the results are based upon. The majority of participants lived in the state of Kentucky. Participants were primarily female. Further research could consist of a larger survey pool to obtain a wider array of responses. There might also be a difference in opinion based on rural or urban living, and inquiries could be made to parents and teachers of older children in high school or college.

All three groups interviewed indicated they perceive play, specifically recess, to benefit kindergarten students, and the literature agrees. Unrestricted outdoor play helps improve children's performance in the classroom and helps them focus more easily (American Academy of Pediatrics, 2013). Time spent outdoors also has physical benefits affecting a child's health and muscle development (CDC, 2010). It has been shown that outdoor play helps children's eyesight, reducing their chances of myopia (Wu et al., 2013). Many participants in this study also emphasized the importance of recess in a child's social and cognitive development. Recess is a time when children can live out what they are learning, such as problem-solving

skills. It is a time when children can freely interact with one another, strengthen relationships, and work together.

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PEDAGOGY

Perceptions of the Physical Education Doctoral Experience: Does Previous Teaching Experience Matter?

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Abstract

In the United States, physical education doctoral programs place great stock in recruiting students who have prior in-service teaching experience. However, little is known about how this experience influences perceptions of doctoral education. We conducted this cross-sectional, exploratory study to develop an initial understanding of how prior teaching experience and gender influence physical education doctoral students' perspectives of program experiences. Participants included 60 physical education doctoral students (29 females, 31 males) who completed an online survey related to their experiences in doctoral education. Data were analyzed using 2 × 2 factorial ANOVAs, and the differences among study variables based on gender and prior teaching experience were examined. Females without experience had more positive perceptions of their program experiences than did those with experience. These results reinforce the role of prior socialization experiences in framing doctoral program socialization. Further research on the recruitment and education of doctoral students with and without teaching experience is warranted.

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Using theoretical frameworks such as occupational socialization theory, researchers have investigated the experiences and perspectives of in-service physical education (PE) teachers working in school environments (e.g., Keay, 2006; Lux & McCullick, 2011; O'Sullivan, 1989; Stran & Curtner-Smith, 2010). Over 25 years ago, Lawson (1991) also argued that attention needed to be given to the study of PE teacher education (PETE) faculty and doctoral students. Few studies (e.g., Casey & Fletcher, 2012; Lee & Curtner-Smith, 2011; Richards, Eberline, & Templin, 2016), however, have been designed to examine the socialization and perspectives of individuals training for careers in PETE. In contrast to the dearth of information related to the socialization of doctoral PETE (D-PETE) students, the socialization literature in higher education is more abundant (e.g., Austin & McDaniels, 2006; Gardner, 2008; Golde & Walker, 2006). Doctoral education, however, is uniquely positioned within the discipline in which it occurs (Gardner, 2010), and there is a need to extend these findings to the study of D-PETE students (Richards et al., 2016). This work is important to the future of PE as D-PETE students will go on to become stewards of the discipline (Golde & Walker, 2006) and advance the field as they conduct research, educate future teachers, and provide professional development to in-service practitioners (van der Mars, 2011).

Although numerous questions related to D-PETE need to be addressed, one particular concern relates to the influence and relevance of in-service teaching experience in K–12 school environments[1] on an individual's development as an aspiring PETE faculty member (van der Mars, 2011). In the United States, much emphasis is placed on recruiting D-PETE students who have previous teaching experience (Parker, Sutherland, Sinclair, & Ward, 2011; Woods, Goc Karp, & Judd, 2011), with some scholars contending that the ability to draw upon prior teaching experience is essential to being an effective teacher educator (Boyd, Harris, & Murray, 2007). Nevertheless, Casey and Fletcher (2012) called into question indoctrinated views about the necessity of such experience and highlighted ways in which it can form a barrier, as practices that do not transfer

[1]In the current study, we define teaching experience as having held a formal position as an in-service PE teacher in an elementary or secondary school environment. This precludes field experiences, including student teaching, that are part of preservice teacher education programming.

to higher education must be unlearned. This could negatively affect how individuals with teaching experience view doctoral training. Aptly, van der Mars (2011) insisted that "until we actually have some data, I propose a moratorium on arguments over the experience factor" (p. 198).

Students' genders should be considered in the design of studies related to D-PETE socialization, as previous research has illustrated that females face more challenges integrating into the social environments of higher education, which are often constructed around the experiences of males (Ellis, 2001; Gardner, 2008; Nettles & Millett, 2006). Given that doctoral student satisfaction relates to motivation through program completion (Mason, 2012), it is integral that studies of doctoral student socialization include the perspectives of doctoral students themselves (Taylor & Van Every, 2000). In the current study, we sought to understand how gender and prior teaching experience influence D-PETE students' perceptions of program experiences. Specifically, we examined D-PETE students' perceptions of program quality, satisfaction, student–faculty relationships, student interrelationships, advisor strategies and networking, research training, and teaching preparedness.

Socialization and Prior Teaching Experience

Occupational socialization theory (Richards, Templin, & Graber, 2014; Templin & Schempp, 1989) has been conceptualized as "all kinds of socialization that initially influence persons to enter the field of PE and later are responsible for their perceptions and actions as teacher educators and teachers" (Lawson, 1986, p. 107). As such, it can be used as a conceptual framework for understanding doctoral student education and the potential influence of prior teaching experience on D-PETE students' perspectives of their program experience (Lawson, 1991). This perspective is considered dialectical in that researchers recognize individuals' abilities to resist the influences of others who seek to socialize them (Schempp & Graber, 1992). Traditionally, occupational socialization theory comprises the three phases of acculturation, professional socialization, and organizational socialization (Templin & Richards, 2014). *Acculturation* examines the ways individuals are led to choose careers in PE through interactions with parents, teachers, coaches, and counselors while they are school-age children and adolescents. *Professional*

socialization refers to PETE programming, which typically occurs in a higher education setting (Lawson, 1983a; Lortie, 1975).

Organizational socialization occurs on the job and in the context of the schools in which individuals teach (Lawson, 1983b). Teaching in the K–12 school setting, particularly one in which PE is marginalized, can lead to feelings of isolation and reduced importance related to core academic subjects (Lux & McCullick, 2011). These experiences influence how PE teachers view their discipline (Lynn & Woods, 2010; O'Sullivan, 1989), as well as teaching strategies that are effective for working with children (Casey & Fletcher, 2012). When in-service teachers transition into D-PETE, these experiences contribute to their subjective filter (Richards et al., 2014), or the lens through which they understand and interpret D-PETE experiences.

The shift from school-based PE and university PETE programs (e.g., teaching strategies that work with school-age children, but not college students) require a transformation of practice, which may be difficult for those who have worked as in-service teachers (Casey & Fletcher, 2012). They could, for example, struggle to abandon practices that are not in line with D-PETE program expectations. Having teaching experience could, therefore, become a barrier to integration into D-PETE programs, which could negatively affect the way individuals with teaching experience view doctoral training (Lee & Curtner-Smith, 2011; van der Mars, 2011). Conversely, individuals who enter D-PETE programs without teaching experience are likely to have a different frame of reference (van der Mars, 2011). They may, for example, view PE through an idealized lens without considering the realities of life in schools.

Doctoral Education and Preparation for Faculty Roles

When entering doctoral programs, individuals begin *secondary professional socialization* in preparation for faculty roles (Lee & Curtner-Smith, 2011). Golde (1998) defined this as a process "in which a newcomer is made a member of a community—in the case of doctoral students, the community of an academic department in a particular discipline" (p. 56). Doctoral programs can be conceptualized as a sequence of formal education and informal modeling of behaviors intended to prepare doctoral students for careers in academia (Golde & Walker, 2006). Doctoral students must simultaneously learn about the culture operating within their department

and the discipline within which they are socialized (Reich & Reich, 2006). This culture includes explicitly communicated expectations, as well as unwritten rules that must be learned through graduate school (Austin, 2002; Golde, 1998).

Some evidence suggests that supportive faculty members, clearly articulated program goals, relevant and meaningful coursework, and a developmental department culture can play a positive role in doctoral student development (Pallas, 2001). Students form relationships with and seek support from faculty and peers (Gardner, 2010), as well as individuals outside of their institution such as family members and personal friends (Baker Sweitzer, 2009; Weidman, Twale, & Stein, 2001). Students within the same program often bond with one another as they simultaneously experience the trials and tribulations of graduate school (Gardner, 2007). Weidman et al. (2001) noted four factors influential in promoting effective doctoral education: (1) the departmental culture should present clear, noncontradictory expectations for performance upon which all faculty members agree; (2) students should be afforded opportunities for formal and informal interactions with doctoral students and faculty members; (3) education should occur in a noncompetitive, supportive environment; and (4) the student and professional roles should be blended so the student does not perceive conflict between them.

Specific to D-PETE students, Lee and Curtner-Smith (2011) noted that graduate education represents a potent socializing experience shaped by influential faculty, relationships with other students, and the opportunity to engage in undergraduate teacher education. As such, students in graduate PETE programs may be more likely to adopt more innovative perspectives on teaching PE than those in undergraduate PETE programs (O'Bryant, O'Sullivan, & Raudensky, 2000). However, some evidence also suggests that individuals who developed very conservative orientations toward PE through prior socialization may experience challenges when transitioning into D-PETE (Lee & Curtner-Smith, 2011). This could include the development of beliefs and practices during organizational socialization that do not align with D-PETE (van der Mars, 2011). Other research, however, indicates that the opportunity to practice the role of faculty member during doctoral education (Casey & Fletcher, 2012) and involvement in professional organizations (Richards et al., 2016) are key experiences in the doctoral student development process.

Sensemaking and Doctoral Program Experiences

An important part of understanding secondary professional socialization relates to how D-PETE students make sense of their program experiences. Sensemaking is connected to socialization in that it comprises ongoing, retrospective explanations that help individuals to rationalize their thoughts, behaviors, and feelings (Weick, Sutcliffe, & Obstfeld, 2005). Individuals make sense of their experiences, and these perceptions influence their actions and interactions with others. In other words, "sensemaking is a way station on the road to a consensually constructed, coordinated system of action" (Taylor & Van Every, 2000, p. 275). Individuals' beliefs, grounded in their prior socialization, are viewed as precursors to actions within a social setting (Ajzen, 2012). Sensemaking therefore relates to the dialectical nature of socialization (Schempp & Graber, 1992) and corresponds to the active role individuals play in negotiating their own socialization experiences (Richards et al., 2014).

When interpreting and reinterpreting prior socialization and learning experiences, individuals formulate behavioral responses that may align with, or contradict, the motives and beliefs of the agents that seek to socialize them (Richards & Levesque-Bristol, 2016). Socialization experiences during their time as an in-service physical educator have the potential to influence D-PETE students' perspectives on doctoral education through the development of beliefs and perspectives that do not align with doctoral programming (Lee & Curtner-Smith, 2011). Similarly, skipping the organizational socialization phase and proceeding directly into D-PETE programming leaves individuals with limited direct knowledge of, or experience teaching, PE in school settings, which may result in a different frame of reference (Casey & Fletcher, 2012).

In addition to prior teaching experience, perceived experiences, satisfaction levels, and commitment may be different for male and female D-PETE students. Gardner (2008) found that the doctoral education experience can disadvantage women, and K. Ward and Bensimon (2002) asserted that "historically, higher education has and continues to be a male-dominated enterprise . . . academic culture and the socialization that accompanies it reflect the experiences of men" (p. 432). Women have espoused greater isolation and more

challenges building relationships with faculty and other students than men have (Ellis, 2001; Nettles & Millett, 2006).

Purpose and Research Questions

Although researchers have highlighted effective elements of doctoral education in the PE and extant literatures, numerous questions remain. One particular question that needs to be addressed is whether previous teaching experience influences the process of doctoral training in preparation for faculty roles (van der Mars, 2011). Further, given that doctoral student socialization experiences may differ according to gender (Ellis, 2001; Nettles & Millett, 2006), it is important to account for differences between males' and females' perceptions and understanding of doctoral programming. The purpose of this cross-sectional, exploratory study was to develop an initial understanding of D-PETE students' perspectives of their program experience. Research questions included the following: (1) To what extent are D-PETE students' perceptions influenced by whether or not they taught in school settings prior to doctoral education? (2) What role does gender play in influencing D-PETE students' perspectives on their experience?

Method

Participants

Given that this was a cross-sectional exploratory study, we used an open sampling technique (Strauss & Corbin, 1998), in which any D-PETE student interested in participating was invited to do so. Recruitment occurred through two channels. First, students were recruited through e-mail messages sent through electronic mailing lists maintained by the Society for Health and Physical Educators (SHAPE America) and the Research on Learning and Instruction in Physical Education special interest group of the American Educational Research Association. Second, we identified universities with large doctoral degree programs and asked the program directors to forward e-mail invitations to their D-PETE students.

Participants included 60 D-PETE students (29 females, 31 males) pursuing PhD degrees at institutions of higher education in the United States. Most of the students identified as White (n = 42; 70.0%), and other racial/ethnic affiliations included Asian (n = 11;

18.0%), African American (n = 4; 6.7%), Hispanic (n = 2; 3.3%), and multiple races/ethnicities (n = 1; 1.7%). Participants included those who had (n = 39; 65.0%) and had not (n = 21; 35.0%) taught in K–12 environments prior to pursuing graduate degrees. Of those who had teaching experience, the average student had spent 3.27 years in K–12 schools (SD = 4.59). Most participants were U.S. citizens (n = 45; 75.0%), but a notable minority were international students (n = 15; 25.0%). The average participant was 33.18 years old (SD = 7.07), and over one third were married or cohabiting (n = 23; 38.2%). Further, 17 of the participants (28.3%) reported having an average of between one and two children (M = 1.88 children, SD = 1.05). Most participants attended very high research activity universities[2] (n = 44; 73.3%), but some attended high (n = 10; 16.7%) and moderate to low (n = 6; 10.0%) research activity institutions.

Research Procedures and Data Sources

Following human subjects approval, we reviewed the higher education literature to identify topics and experiences found to be influential in doctoral student socialization. This resulted in the identification of several topics (e.g., relationships with faculty and other students, research training, opportunities to teach) that were used to frame questions in initial focus groups with D-PETE students. Three focus groups were conducted in a D-PETE-focused session at a national level conference in the spring of 2014. The focus groups were semistructured (Patton, 2015) in that they were guided by a list of discussion topics gleaned through the initial literature review, but also allowed us the flexibility to pursue topics introduced by participants. Twenty D-PETE students who did not subsequently participate in the study were included in the focus groups. Following transcription, we reviewed the interviews to identify topics relevant to the D-PETE students' experiences. These topics were considered in the subsequent selection of survey constructs.

After identifying topics important to the experience of D-PETE students through the literature review and focus groups, we searched the literature to find psychometric instruments that tapped into relevant constructs. Following this search, we selected items from existing instruments and developed them into an online survey using

[2]Level of research activity was determined in reference to the Carnegie classification system available at the time of the study.

Qualtrics survey software. The survey consisted of 52 items drawn from the University of Massachusetts Graduate Student Experience Survey (Henderson & Stassen, 2008), Mason's (2012) study on satisfaction with graduate school, and Rensselaer Polytechnic Institute's (2011) Graduate Student Survey. After development, the survey was revised by members of the research team and then pilot tested with 15 doctoral students in the fall of 2014. The pilot test led to minor corrections related to survey structure and flow, and the survey was estimated to take 15 to 20 min to complete.

University of Massachusetts Graduate Experience Survey. The majority of the survey questions were derived from Henderson and Stassen's (2008) University of Massachusetts Graduate Experience Survey. The survey includes nine subscales that measure various elements of the graduate student experience. In this study, we drew upon the following subscales: perceived program quality (e.g., please rate the intellectual quality of the faculty), student–faculty relationships (e.g., it has been difficult for me to find a faculty member with whom to work), student interrelationships (e.g., experienced students in my program mentor new students), advisor strategies and networking (e.g., my advisor/chair teaches me strategies for succeeding in my field), and research training (e.g., the training you received before undertaking your own research). The anchors varied by subscale, but all items were set on a 5-point Likert-type scale. Internal consistency has been previously established (Henderson & Stassen, 2008) and was adequate to good in the current study (Cronbach's α ranged from .79 to .85).

Satisfaction. In a study of doctoral student motivation, Mason (2012) developed a measure of doctoral student satisfaction with program experiences. The three satisfaction items were set to a 5-point Likert-type scale anchored by 1 (*does not correspond at all*) and 5 (*very strongly corresponds*). An example item was "if I had to do it over again, I would definitely choose this graduate school." Mason reported good internal consistency for the satisfaction construct, and it was excellent in the current study (Cronbach's α = .90).

Teaching preparation. Rensselaer Polytechnic Institute (2011) developed a graduate exit survey that includes four items to measure perceptions of teaching preparedness. These items were administered because the University of Massachusetts Graduate Experience

Survey did not include questions that examined perceptions of teaching. Items were set on a 5-point Likert-type scale anchored by 1 (*strongly disagree*) and 5 (*strongly agree*). An example item included "teaching assistants in my program are appropriately prepared and trained before entering the classroom." Prior internal consistency information was not available, but the construct had good internal consistency in the current study (Cronbach's $\alpha = .81$).

Data Analysis

Primary data analyses involved 2 × 2 (Gender × Previous Teaching Experience) factorial ANOVAs. Prior to running these analyses, we conducted standard procedures for data cleaning and screening (Tabachnick & Fidell, 2013). The following assumptions of factorial ANOVA were checked: (1) the dependent variable should approximate an interval level of measurement; (2) the independent variables should consist of categorical, independent groups; (3) independence of observations; (4) there should be no extreme outliers (i.e., 3 × the interquartile range); (5) the dependent variable should be normally distributed; and (6) there should be homogeneity of variance (Warner, 2012). Descriptive statistics and bivariate correlations were then calculated for all variables with Spearman's rank correlation coefficient.

After finding that all of the assumptions were met, we used 2 × 2 factorial ANOVAs to evaluate differences in D-PETE students' perceptions of study variables based on gender and prior teaching experience. We used partial eta squared to estimate effect size in the factorial ANOVA models. A partial eta squared value between .01 and .06 is associated with a small effect, between .06 and .14 with a medium effect, and greater than .14 with a large effect (Warner, 2012). Significant interaction terms were interpreted using post hoc tests for simple effects in the general linear model (GLM) procedure, which compares the marginal means for the interaction (Becker & Coolidge, 1991). We applied a Bonferroni adjustment to the post hoc tests to account for multiple comparisons. All statistical analyses were conducted using IBM SPSS 21.0.

Results

Preliminary Analyses

Table 1 displays means, standard deviations, skewness, kurtosis, and minimum and maximum values for each variable. In aggregate, participants perceived high levels of all of the variables (i.e., above 4.00 on the 5.00 scale), with the exception of research training and teaching preparedness, which were moderately high (i.e., between 3.00 and 4.00 on the 5.00 scale). Using Kline's (2005) guideline of skewness < |3.00| and kurtosis < |10.00|, we found that all of the variables were within acceptable ranges of normality.

Table 1
Aggregate Descriptive Statistics for All of the Variables

Variable	*N*	*M*	*SD*	Min	Max	Skew	Kurtosis
Program Quality	60	4.48	.57	2.67	5.00	-1.35	1.87
Satisfaction	60	4.43	.80	2.00	5.00	-1.51	1.65
Student–Faculty Relationships	60	4.22	.63	2.33	5.00	-.59	-.01
Student Interrelations	60	4.29	.69	2.33	5.00	-.75	-.02
Advisor Strategies and Networking	60	4.17	.70	2.33	5.00	-.73	-.04
Research Training	57	3.84	.68	2.20	5.00	-.40	-.14
Teaching Preparedness	50	3.69	.92	1.50	5.00	-.65	-.03

Note. $N = 60$ D-PETE students; *n* for research training and teaching preparedness is lower because not all students engaged in research and teaching responsibilities. Survey variables measured on a 5-point Likert-type scale.

Correlations were examined among all of the survey variables, along with gender and prior teaching experience, with Spearman's rank correlation coefficient. All of the survey variables were significantly correlated (Table 2). The strongest associations were between satisfaction and program quality, $\rho(60) = .67$, $p < .05$, and program quality and advisor strategies and networking, $\rho(60) = .63$, $p < .05$. The weakest correlations were between student–faculty relationships and research training, $\rho(57) = .33$, $p < .05$, and student interrelations and teaching preparedness, $\rho(57) = .29$, $p < .05$. Gender and teaching experience did not correlate significantly with one another or any of the survey variables.

Table 2
Bivariate Correlations for All of the Variables

Construct	1	2	3	4	5	6	7	8	9
1. Program Quality[a]	1.00								
2. Satisfaction[a]	.67**	1.00							
3. Student–Faculty Relationships[a]	.63**	.54**	1.00						
4. Student Interrelations[a]	.51**	.53**	.44**	1.00					
5. Advisor Strategies and Networking[a]	.53**	.60**	.42**	.45**	1.00				
6. Research Training[b]	.38**	.51**	.33*	.29*	.51**	1.00			
7. Teaching Preparedness[c]	.59**	.56**	.52**	.35*	.60**	.48**	1.00		
8. Gender[a]	.16^{NS}	.08^{NS}	.07^{NS}	.22^{NS}	.03^{NS}	.03^{NS}	-.04^{NS}	1.00	
9. Teaching Experience[a]	.20^{NS}	.12^{NS}	.16^{NS}	.11^{NS}	.14^{NS}	.13^{NS}	.03^{NS}	.08^{NS}	1.00

Note. Gender is coded 0 for female and 1 for male. Prior teaching experience is coded 0 for teaching experience and 1 for no prior teaching experience. Correlations calculated using Spearman's rank correlation coefficient. NS = not significant.

[a]N = 60 D-PETE students. [b]N = 57 D-PETE students. [c]N = 50 D-PETE students.

*$p < .05$. **$p < .01$.

Examining Perceived Differences Based on Gender and Teaching Experience

Following preliminary descriptive analyses, 2 × 2 factorial ANOVAs were conducted for each of the study variables and are summarized in Table 3. For program quality, the main effects for gender and previous teaching experience were not significant. However, there was a significant Gender × Previous Teaching Experience interaction, $F(1, 56) = 4.35$, $p < .05$, partial $\eta^2 = .072$, which is illustrated in Figure 1. Bonferroni-adjusted post hoc tests for simple effects indicated that female students without teaching experience had significantly more positive perceptions of program quality than did those who had prior teaching experience, $F(1, 56) = 5.27$, $p < .05$, partial $\eta^2 = .086$. No significant difference was found between the scores of male participants with and without teaching experience.

In the 2 × 2 factorial AVOVA for satisfaction, the main effects for gender and previous teaching experience were not significant. However, there was a significant Gender × Previous Teaching Experience interaction, $F(1, 56) = 7.44$, $p < .05$, partial $\eta^2 = .117$, which is illustrated in Figure 2. Post hoc tests for simple effects using a Bonferroni adjustment for multiple comparisons indicated that female participants without teaching experience were more satisfied with their program experiences than were those who had taught previously in schools, $F(1, 56) = 4.45$, $p < .05$, partial $\eta^2 = .074$. However, no significant difference was found between male students who had and had not previously taught in schools relative to satisfaction.

For student interrelations, the 2 × 2 factorial ANOVA indicated that the main effects for gender and previous teaching experience were not significant. However, there was a significant Gender × Previous Teaching Experience interaction effect, $F(1, 56) = 3.96$, $p = .050$, partial $\eta^2 = .066$, which is illustrated in Figure 3. Bonferroni-adjusted post hoc tests for simple effects indicated that among female D-PETE students, those without teaching experience had more positive perceptions of student interrelations than did those who had taught before pursuing a PhD, $F(1, 56) = 4.29$, $p < .05$, partial $\eta^2 = .071$. There was not, however, a significant difference between males who had and had not taught previously.

Table 3

ANOVA Tables for the Variables by Gender and Prior Teaching Experience

Construct by gender	Prior teaching experience		Factor								
			Experience			Gender			Interaction		
	Yes	No			Partial			Partial			Partial
	M (*SD*)	*M* (*SD*)	*F*	*p*	η^2	*F*	*p*	η^2	*F*	*p*	η^2
Program Quality	*n* = 39	*n* = 21	1.68	.201	.029	.66	.421	.012	4.35	.042*	.072
Female (*n* = 29)	4.20 (.67)	4.70 (.44)									
Male (*n* = 31)	4.63 (.35)	4.51 (.64)									
Satisfaction	*n* = 39	*n* = 21	.14	.706	.003	.06	.806	.001	7.44	.008**	.117
Female (*n* = 29)	4.17 (.85)	4.81 (.38)									
Male (*n* = 31)	4.68 (.45)	4.19 (1.13)									
Student–Faculty Relationships	*n* = 39	*n* = 21	.74	.393	.016	.04	.853	.001	1.39	.244	.024
Female (*n* = 29)	4.09 (.55)	4.44 (.61)									
Male (*n* = 31)	4.26 (.56)	4.21 (.87)									
Student Interrelations	*n* = 39	*n* = 21	1.14	.291	.020	1.73	.194	.030	3.96	.050*	.066
Female (*n* = 29)	3.93 (.83)	4.48 (.60)									
Male (*n* = 31)	4.52 (.48)	4.36 (.63)									
Advisor Strategies and Networking	*n* = 39	*n* = 21	1.86	.179	.032	.31	.581	.005	7.25	.009**	.115
Female (*n* = 29)	3.91 (.79)	4.65 (.31)									
Male (*n* = 31)	4.30 (.63)	4.10 (.71)									
Research Training	*n* = 36	*n* = 21	1.27	.265	.023	.007	.931	< .001	1.86	.178	.034
Female (*n* = 26)	3.62 (.76)	4.09 (.52)									
Male (*n* = 31)	3.89 (.50)	3.85 (.87)									
Teaching Preparedness	*n* = 33	*n* = 17	.14	.706	.003	1.11	.299	.023	5.67	.021*	.110
Female (*n* = 24)	3.48 (.92)	4.21 (.57)									
Male (*n* = 26)	3.84 (.96)	3.31 (.93)									

*$p < .05$. **$p < .01$.

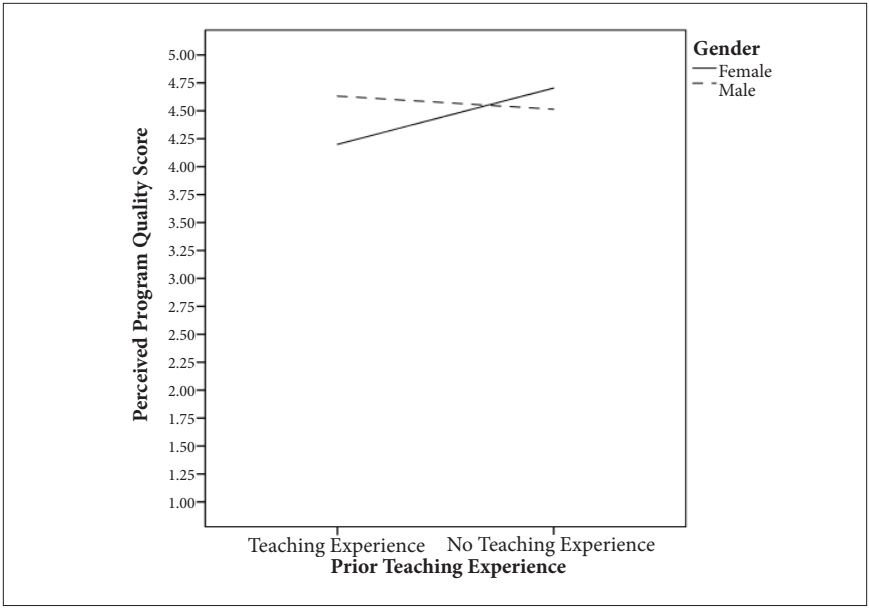

Figure 1. Means plot displaying interaction for perceived program quality for gender (male and female) and teaching experience (teaching experience and no teaching experience).

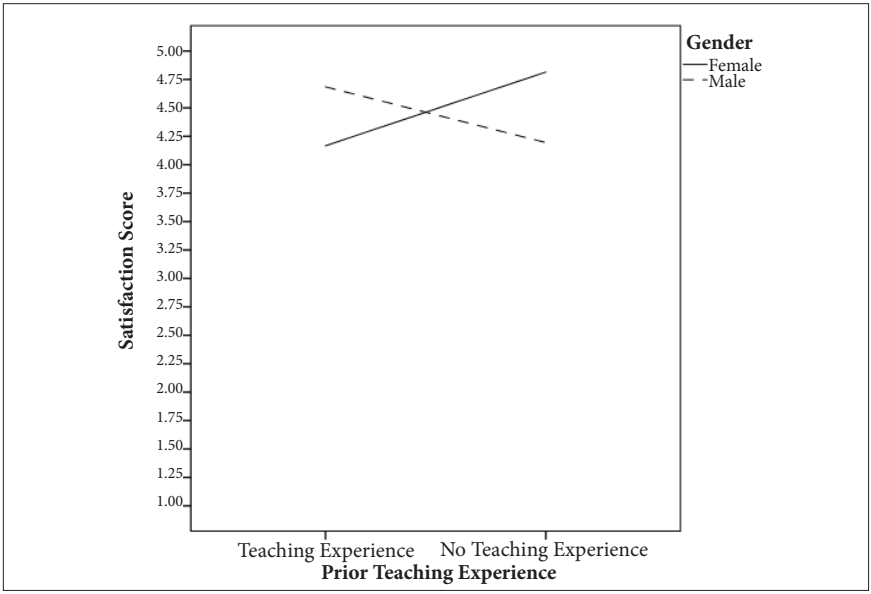

Figure 2. Means plot displaying interaction for satisfaction for gender (male and female) and teaching experience (teaching experience and no teaching experience).

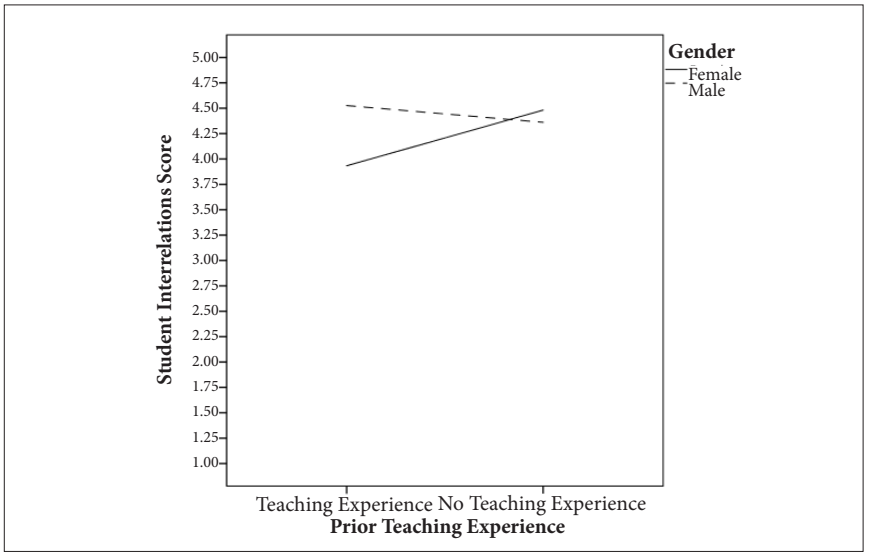

Figure 3. Means plot displaying interaction for student interrelations for gender (male and female) and teaching experience (teaching experience and no teaching experience).

The 2 × 2 factorial ANOVA for advisor strategies and networking indicated that the main effects for gender and previous teaching experience were not significant. There was, however, a significant Gender × Previous Teaching Experience interaction effect, $F(1, 56) = 7.25$, $p < .05$, partial $\eta^2 = .115$, which is depicted in Figure 4. Post hoc test for simple effects using a Bonferroni adjustment for multiple comparisons indicated that female D-PETE students without teaching experience had more positive perceptions of advisor strategies and networking than did those who had previously taught, $F(1, 56) = 7.58$, $p < .05$, partial $\eta^2 = .119$. There was not, however, a significant difference between males who had and had not taught previously.

For teaching preparedness, the 2 × 2 factorial ANOVA indicated that the main effects for gender and previous teaching experience were not significant. Nevertheless, there was a significant Gender × Previous Teaching Experience interaction effect, $F(1, 46) = 5.67$, $p < .05$, partial $\eta^2 = .110$, which is displayed in Figure 5. Bonferroni-adjusted post hoc tests for simple effects were used to interpret the interaction. Although the interaction effect was significant, the adjusted post hoc tests indicated no significant differ-

ences relative to prior teaching experience for either male or female students.

The tests for student–faculty relationships and research training were not significant.

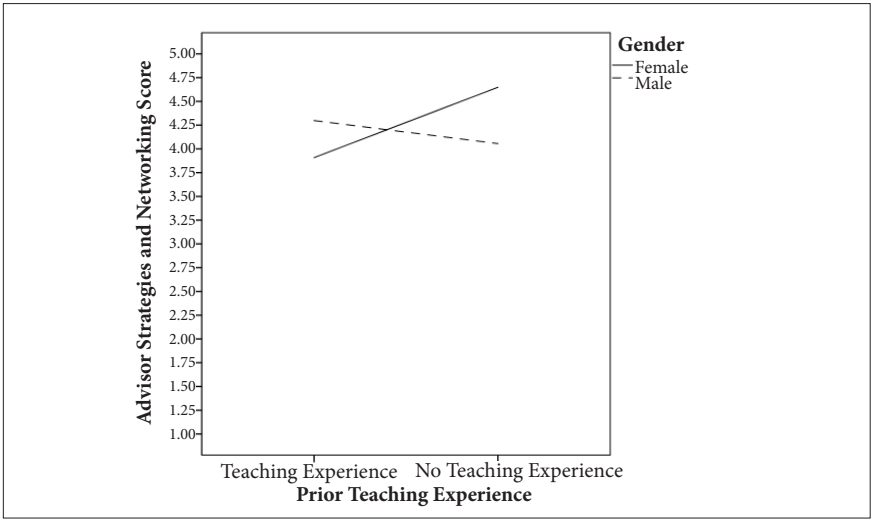

Figure 4. Means plot displaying interaction for advisor strategies and networking for gender (male and female) and teaching experience (teaching experience and no teaching experience).

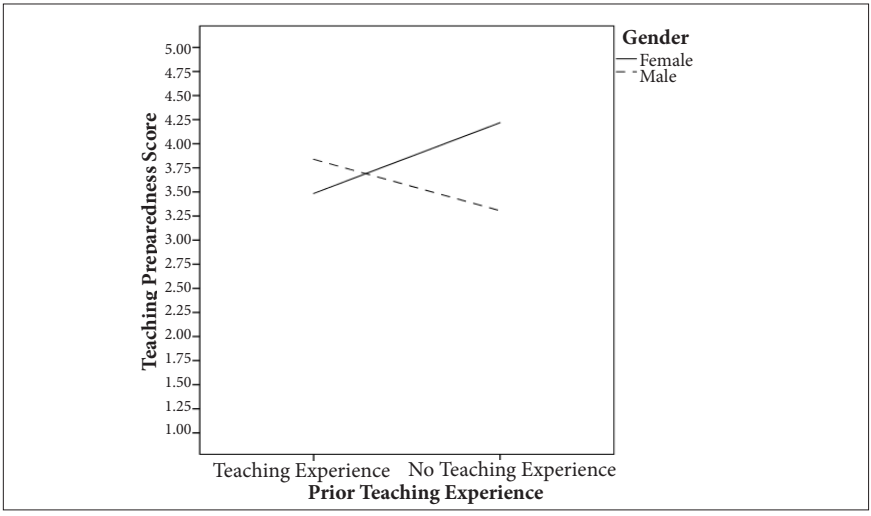

Figure 5. Means plot displaying interaction for teacher preparedness for gender (male and female) and teaching experience (teaching experience and no teaching experience).

Discussion

The purpose of this investigation was to develop an initial understanding of how prior teaching experience and gender influence D-PETE students' perceptions of their program experiences. The D-PETE students who participated in this survey generally reported positive perceptions of program quality, satisfaction, student–faculty relationships, and student interrelations, and moderately positive perceptions of advisor strategies and networking, research training, and teaching preparedness. Although the effect sizes of some of the significant interactions were fairly small and warrant caution for interpretation with regard to practical significance, it was revealed that female students without prior teaching experience had more positive perceptions of their D-PETE experiences than did their counterparts with experience.

Several implications manifest from the results of this study for occupational socialization (Richards et al., 2014; Templin & Schempp, 1989), particularly regarding students' perceptions of D-PETE experiences. According to the doctoral student socialization literature in higher education, relationships with faculty (Gardner, 2010) and peers (Weidman et al., 2001) are important facilitators in helping graduate students navigate the social realities of doctoral education programs. Further, doctoral students' program satisfaction has been found to relate to their motivation through program completion (Mason, 2012). In the current study, female D-PETE students without teaching experience perceived more positive student interrelations and, although no differences were found relative to student–faculty relationships, female D-PETE students also felt as if their advisors were more supportive of networking. Although some important differences were found relative to female students with and without teaching experience, it should be noted that no differences were found relative to research training (Weidman et al., 2001). Similarly, although the interaction for teaching preparedness was significant, follow-up tests did not detect significant differences.

Although additional research will be needed for those in the field to completely understand why female D-PETE students without teaching experience had more positive program perceptions than did those with teaching experience, one hypothesis drawn from the work of Casey and Fletcher (2012) is that females without teach-

ing experience may have less tension moving into secondary professional socialization. This may be due to the lesser need to "unlearn" practices and perceptions of the field that were developed through organizational socialization in school settings but do not transfer to higher education settings. Individuals who teach in schools prior to entering D-PETE programs may have strongly formed beliefs about the realities of teaching that could conflict with doctoral programming (Lee & Curtner-Smith, 2011; Richards et al., 2014). Those without teaching experience, many of whom just finished undergraduate studies, may be more abreast of current practices in the field. Further, this result could relate to the type of recruit who forgoes teaching experience and enters secondary professional socialization. This individual is more likely to be younger and perhaps less likely to be cohabiting with a partner or have children and thus may have more time and energy to dedicate to D-PETE studies.[3]

Individuals pursuing doctoral degrees in education, including D-PETE, may be different from the general population of doctoral-seeking students. Nearly half of all graduate students are between the ages of 20 and 29, with many coming directly out of undergraduate programs, and pursuing a doctoral degree can be a challenge for older students (Gardner, 2008). Stacy (2006) went as far as to say that it is "almost impossible for older, mid-career students" to enter chemistry doctoral programs (p. 4). However, because many individuals work as in-service teachers before moving into education doctoral programs, D-PETE doctoral students are likely to be older and may be further removed from previous learning in higher education settings. This may require them to relearn how to be a student, in addition to becoming immersed in their doctoral education experiences. For example, given that some D-PETE students are coming into programs without in-service teaching experience, older students may experience challenges associated with learning to form relationships with much younger peers (Gardner, 2008). This topic merits further attention for future research to disentangle the effects of being older from those that result from having prior teaching experience.

[3]In this study, D-PETE students with teaching experience were on average 35.10 years old (*SD* = 7.52), 46.20% were cohabiting with a partner, and 35.90% had children. The D-PETE students without teaching experiences were an average of 29.62 years old (*SD* = 4.39), 23.80% were cohabiting with a partner, and 14.30% had children.

Prior research in higher education (e.g., Ellis, 2001; Nettles & Millett, 2006) has documented that gender can play an important role in doctoral student socialization, with female students noting greater challenges in progressing through their programs than their male counterparts did. In the current study, when examined holistically, gender was not significantly related to any of the program variables. Gender differences were observed only with teaching experience. Further research is necessary to reveal the meaning behind these interactions, but one explanation could be that females who had spent time in schools have greater difficulty letting go of subjective theories of PE (Grotjahn, 1991; Richards et al., 2014) developed through previous socialization experiences. These experiences may present greater barriers to successful integration into academic settings (Casey & Fletcher, 2012). Alternatively, because traditional gender roles place greater marital and parental stress on women, and D-PETE students with teaching experience may be more likely to be married and have children, the less favorable impressions may be a function of work–family role conflict (Netemeyer, Boles, & McMurrian, 1996). Congruent with the findings of Gardner's (2008) research, female D-PETE students with prior teaching experience may struggle more with balancing school and personal roles than those who go straight to doctoral training.

While acknowledging the importance of prior teaching experience, Casey and Fletcher (2012) noted that prior teaching experience "is not a guaranteed indicator of a high quality teacher educator. There are outstanding teacher educators who have no prior K–12 experiences" (pp. 363–364). Our findings do not provide direct support for Casey and Fletcher's (2012) observation, as we did not measure the effectiveness of D-PETE students with or without teaching experience, and satisfaction with doctoral education is not synonymous with a successful experience in preparation for faculty roles. However, we believe that the results of this study provide the impetus for further study of the "teaching experience question." Through additional targeted inquiry, the field will develop a more comprehensive understanding of how doctoral students experience their education, including the role played by prior socialization in framing D-PETE experiences (Lee & Curtner-Smith, 2011).

Limitations of the Study and Future Directions

Although the findings of this study hold relevance to those interested in D-PETE training, several limitations should be borne in mind. First, the open sampling strategy (Strauss & Corbin, 1998) used to recruit participants precluded our ability to calculate a response rate or conduct any analyses on the characteristics of students who chose not to respond. The sample was also skewed toward Caucasian students from the United States, which may inhibit the generalization of findings to students of other racial/ethnic backgrounds and international students. Given that the study was cross-sectional, we were not able to capture changes in D-PETE students' experiences over time. It is probable that D-PETE students' experiences are likely to change as they progress through their programs, but such variance can only be captured through longitudinal designs. Further, although most of the instruments from which questions were drawn had undergone some prior validation, they have primarily been used for program evaluation rather than empirical research.

It should also be noted that we did not account for years of prior teaching experience or the D-PETE students' current point of matriculation in their programs. Beginning students may have different perspectives than their more advanced counterparts, and students who taught in schools for several years may have been socialized differently than those who only taught 1 or 2 years before enrolling in D-PETE. Finally, this study focuses on D-PETE students' perceptions of their experiences. These results, therefore, do not speak to the objective effectiveness of graduate training, nor do they highlight the observed effects of prior teaching experience on one's effectiveness as a teacher educator. Although the current research into D-PETE students' perceptions is an important step in understanding individuals' experiences, additional research is needed for the field to objectively understand the influence of prior teaching experience on faculty role development and ultimately on the effectiveness of faculty as teacher educators.

In addition to those outlined, several future directions for research merit mention. First and foremost, this study is part of a much larger question related to the influence of prior in-service teaching experience on an individual's practice as a teacher educator. Additional research will be necessary for those in the field to

understand the preparation and effectiveness D-PETE students and PETE faculty members with and without such experience. As future scholars approach that question, factors such as the Carnegie classification of the institution should be considered. Students studying at smaller institutions may, for example, have different experiences with research training than those studying at very high research activity universities. Students' point of matriculation in their respective programs should also be considered, as individuals toward the end of their degree programs may have different views than those beginning their D-PETE program. Finally, work with D-PETE students will need to extend into PETE faculty for those in the field to understand how teaching experience influences faculty beliefs and behaviors once those individuals enter a PETE faculty position.

Conclusions and Future Directions

In conclusion, the primary finding of this study is that among female D-PETE students, lacking teaching experience was associated with an enhanced perception of program experiences. Additional work related to the influence of prior teaching experience and secondary professional socialization is warranted, particularly because a notable number of individuals are seeking entrance into D-PETE programs who do not have traditional in-service teaching experience. Due in part to the financial implications of leaving a full-time teaching position to become a student again, it is becoming difficult to recruit in-service teachers into D-PETE programs (van der Mars, 2011), and even those faculty and administration working in D-PETE programs with teaching experience requirements are being forced to make exceptions to facilitate program entrance (P. Ward et al., 2011). It is therefore critical for those in the field to understand the role of prior teaching experience in individuals' attitudes, beliefs, and behaviors as teacher educators.

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PHYSICAL ACTIVITY

The Status of Physical Activity Opportunities in Idaho Schools

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Abstract

Recent literature indicates that low percentages of Idaho adolescents report being physically active on a daily basis. Research examines school PA, however, little focuses on Comprehensive School Physical Activity Programs (CSPAPs) from the perspectives of physical educators. This study explored Idaho physical educators' perceptions and implementation of CSPAPs. Physical educators (n = 268) were invited to complete an online survey; 108 surveys were completed (40% response rate). Close-ended responses were analyzed with descriptive statistics, and open-ended responses were analyzed into coherent categories. Teachers reported that they provided quality physical education, PA opportunities before and after school, opportunities during school, and family and community events and that they have staff involved in PA. Teachers provided PA opportunities for all levels of ability and to promote overall wellness. A majority of respondents indicated specific challenges to implementing a CSPAP at their schools: time allotted in job descriptions, outside commitments, compensation, resources, facilities, and equipment. Few teachers reported having CSPAP professional development, but many expressed interest in the opportunity. Most teachers felt supported by stakeholders and felt CSPAP is important, but few implemented all CSPAP components due to perceptions of challenges. Research should examine professional

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development opportunities and strategies that can increase Idaho PA opportunities.

A Comprehensive School Physical Activity Program (CSPAP) is a multicomponent approach by which school districts and schools use all opportunities for students to be physically active, meet the nationally recommended 60 min/day of moderate to vigorous physical activity (MVPA), and develop the knowledge, skills, and confidence to be physically active for a lifetime (Centers for Disease Control and Prevention [CDC], n.d.-a, 2013). According to data obtained from a national survey completed by a representative sample of the U.S. population, only about 25% of children aged 6 to 15 years met the 60 min/day recommendation (Troiano et al., 2008). Similarly, in Idaho only 29.6% of adolescents reported being physically active for a total of at least 60 min/day on each of the 7 days prior to completing a self-report survey, and only 21.4% of Idaho adolescents attended daily physical education (PE) classes in an average week (CDC, 2016). In attempts to increase adolescent physical activity (PA), the CSPAP national framework (CDC, n.d.-b) promotes PA opportunities for adolescents through school settings in a variety of ways including quality PE classes and before, during, and after school programs that incorporate PA. It also encourages school staff, communities, and families to be involved in PA opportunities in a variety of ways (CDC, n.d.-a, 2013).

Quality PE (QPE) is at the heart of CSPAPs (CDC, 2013; Rink, Hall, & Williams, 2010), and the purpose of QPE is to "provide the opportunity for students to learn knowledge and skills needed to establish and maintain physically active lifestyles throughout childhood and adolescence and into adulthood" (CDC, 2013, p. 12). PE classes play an integral part in adolescent PA participation levels (Le Masurier & Corbin, 2006). Idaho mandates PE in Grades 1 to 8, but not at the high school level. QPE is important, but it alone may not be able to help adolescents achieve the 60 min/day MVPA recommendation, because there is no specified amount of QPE time per week in Grades 1 to 8 specified in the Idaho standards (Society of Health and Physical Educators [SHAPE America], 2016). In addition, PE is provided as an elective at the high school level, but students are not required to take it (SHAPE America, 2016). According SHAPE America (2016), daily recess or classroom PA breaks are not required

in Idaho elementary schools, nor is there any PA time requirement at any of the school levels. Thus, providing opportunities for PA before, during, and after school in Idaho becomes essential for adolescents to achieve national PA recommendations. SHAPE America (2016) recommends that "physical education teachers should coordinate the physical activity initiatives that are integrated throughout the school day" (p. 15) in attempts to help adolescents achieve 60 min/day of PA. If physical educators are being called upon to lead PA initiatives and efforts as leaders in the fields of health and PE, it only makes sense that they are aware of and understand the ins and outs of CSPAPs and the implementation process.

In recent years, a growing body of literature examining the facilitators and barriers to incorporating PA in a variety of ways in school settings has emerged. Centeio, Erwin, and Castelli (2014) indicated that successful CSPAP implementation hinges on (a) action plan, (b) supportive administration, and (c) passion and dedication for the health of students. Many teachers are afraid to try classroom-based PA, perceiving a loss of control, which they equate to chaos. McMullen, Kulinna, and Cothran (2014) found that in regard to choosing PA to include in their classroom, teachers considered degree of chaos, space constraints, time to get back on task, connection to academic content, ease of implementation, and enjoyment. Teachers indicated a lack of time, for planning and for implementation, to incorporate PA throughout the school day as a challenge (Lasky, Moore, & Sutherland, 2001; Patton, 2012).

To promote health and PA, the socioecological model (McLeroy, Bibeau, Steckler, & Glanz, 1988) describes how patterned behavior can be determined by five levels of individual and environmental factors including intrapersonal factors, interpersonal processes and primary groups, institutional factors, community factors, and public policy. At the intrapersonal, or individual, level, behavior is influenced by individual factors such as the beliefs, attitudes, knowledge, self-concept, and skills of the individual. At the second level, interpersonal process and primary groups, behavior is influenced by social factors such as family and networks of work and friend groups. Institutional factors with operating rules and regulations, at the third level, have the potential to influence behaviors. Community factors are described as "the relationships among organizations,

institutions, and informal networks" (McLeroy et al., 1988, p. 355) and influence behavior at the fourth level. At the fifth level, public policy at local, state, and national levels has the potential to influence behavior (McLeroy et al., 1988). The purpose of this model is to "focus attention on the environmental causes of behavior and to identify environmental interventions" (McLeroy et al., 1988, p. 366); in this case, the behavior refers to physical educators' implementation of PA opportunities specifically using the CSPAP model and their attempt to identify individual and environmental factors that influence this behavior.

Although several reports examine national and state school PA and PE (i.e., 2016 *Shape of the Nation* report, 2014 *State Indicator Report on Physcial Activity*, *2008 Physical Activity Guidelines for Americans*, the National Physical Activity Plan, and *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People*), few of the reports focus on the implementation of CSPAPs from the perspectives of physical educators in Idaho; therefore, the purpose of this study was to gain an understanding of Idaho physical educators' perceptions, understanding, and implementation of CSPAPs within their schools. Specific research questions included the following: (a) What are the types of PA opportunities, as guided by the CSPAP model, provided by pre-K–12 Idaho PE teachers? (b) What role do physical educators take in providing CSPAP? Why, and what support do they get? (c) What is the knowledge of the Comprehensive School Physical Activity Program (CSPAP)? (d) What are physical educators' perceptions of barriers for CSPAP implementation?

Method

Participants

Participant e-mail contact information was obtained from the Society of Health and Physical Educators Idaho (SHAPE Idaho) database, and all participants were PE and/or health teachers. Participant criteria included teaching PE in a pre-K–12 setting; therefore, any individual who did not meet this criterion was removed from the list and not contacted to participate in this study. The university's institutional review board approved the study, and consent was obtained from each participant before they participated in the study.

Data Collection

The main source of data included an electronic survey through the Qualtrics survey program. Participants were contacted via e-mail obtained from the state organization SHAPE Idaho, and the e-mail contained a link to the CSPAP survey. Two hundred sixty-eight physical educators in Idaho were contacted to complete the survey, and 110 surveys were opened. Two of the participants did not agree to participate in the study, and 108 participants agreed and completed the survey (40% response rate). A second e-mail requesting participants complete the survey was sent 10 days after the initial e-mail, and one last e-mail reminder requesting completion of the survey was sent 4 weeks following the initial e-mail. No identifying information was associated with the data obtained during collection unless the participant willingly included identifying information within the survey.

The CSPAP survey was self-designed and was intended to assess physical educators' perceptions, understanding, and implementation of a CSPAP within their school setting. An initial draft of the survey was created and included 28 questions that were multiple-choice, short answer, or Likert scale responses. Next, the researchers piloted the draft survey with six PE teachers, representative of each school level, to identify content and face validity agreement in relation to ease and appropriateness of questions and subsequent responses. Through this process, a suggestion from the teachers resulted in one change being made to the draft survey; this change included adding a multiple-choice option relating to no knowledge/never heard of the CSPAP model to the question about understanding of the CSPAP model. The final survey included 28 questions that were multiple-choice, short answer, or Likert scale responses. Eighteen multiple-choice questions examined physical educators' understanding of the CSPAP model, CSPAP components implemented in school settings, PA resources utilized within the school setting, shared facility agreements for PA, PE and PA professional development, professional development directly related to CSPAPs, and the extent to which physical educators felt they provided MVPA 50% of the PE class time. Five Likert scale questions captured the opinions of the physical educators related to the degree of support they felt from various stakeholders to enhance PA opportunities in their

school, the extent to which they felt implementing various CSPAP components was a part of their job description, the type of role they felt they played in providing PA opportunities within each CSPAP component, the extent to which they felt various challenges when implementing PA outside of PE classes, and the amount of CSPAP participation by various populations within their school settings. With QPE as the foundation of CSPAPs (CDC, 2013; Rink et al., 2010) and physical educators being asked to lead CSPAP efforts (SHAPE America, 2016), it is essential to understand the perceptions of physical educators regarding their role as physical educators and CSPAP leaders. In addition, it is well-documented that support for a facilitator of CSPAPs in school settings is critical (Berei, 2015; Centeio, Erwin, & Castelli, 2014; Doolittle & Rukavina, 2014); therefore, examining the perception of support that physical educators receive within their school settings is important. Four of the survey questions asked for open-ended responses related to why physical educators provide PA opportunities or training to others outside of PE; minutes of PE provided for students per week; additional thoughts, comments, or concerns related to CSPAP; and the college/university from which participants obtained their teaching certification (demographic question). Last, questions about participant demographics such as age, gender, teaching experience, level and recentness of education, level of PE taught (i.e., K–5, 6–8, 9–12), PE department size, and status of state and national organization membership were included.

Data Analysis

The CSPAP survey included questions that were quantitative and qualitative in nature. All survey data was downloaded from Qualtrics to a word document so that it could be easily analyzed.

CSPAP survey questions that were qualitative (open-ended, short answer) were organized into coherent categories and analyzed. Trustworthiness of the data was established through (a) triangulation using multiple investigators (two) and (b) a peer debriefer. The peer debriefer checked the work of other researchers throughout the data analysis process and reviewed the raw data and findings for data credibility (Merriam, 2009).

Results

The purpose of this study was to gain an understanding of Idaho physical educators' perceptions, understanding, and implementation of CSPAPs within their schools. Participant ages ranged from 26 to 30 (9%), 31 to 35 (20%), 36 to 40 (15%), 41 to 45 (16%), 46 to 50 (10%), 51 to 55 (16%), and 56 to 60 (14%). Males accounted for 38% and females accounted for 62% of the survey respondents. Participants taught at a variety of levels: 33% elementary, 31% middle school, 18% high school, 10% K–12, 2% preschool, and 4% a combination of levels. Years of teaching experience also varied; 7% taught 1 to 2 years, 10% taught 3 to 6 years, 18% taught 7 to 9 years, 10% taught 10 to 12 years, 10% taught 13 to 15 years, 7% taught 16 to 18 years, and 37% taught 19 or more years. PE department sizes revealed 92% of the schools had four or less teachers, 5% had five to six teachers, and 2% had 10 teachers. The majority (70%) of the participants received their teaching degree at an institution within the state of Idaho. Level of education included 59% with a bachelor's degree and 41% with a master's degree. Last, 59% of the teachers are members of the state organization SHAPE Idaho, and 30% are members of the national organization SHAPE America.

CSPAP survey results indicated physical educators' perceptions, understanding, and implementation of CSPAPs within school settings in the state of Idaho. Survey results were grouped into several overall categories including CSPAP familiarity and interest, CSPAP opportunities provided, physical educator perceptions of their role and support for PA programs, and barriers to CSPAP implementation.

CSPAP Familiarity and Interest

Although the original CSPAP model was introduced in 2008 (National Association for Sport and Physical Education, 2008) and is currently promoted as a national framework (CDC, n.d.-b), respondents felt they were very familiar with CSPAPs and implemented all parts of the model systematically (3%); were familiar with the CSPAP model and implemented some components (16%); had heard of CSPAP, but were unfamiliar with what the model looked like or the components within the model (48%); had heard of CSPAP, but felt as though they did not implement any of the five components (4%); or had never heard of the CSPAP model (27%).

Although PE and/or PA professional development was provided for 63% of the physical educators, only 10% had received professional development or training directly related to leading or implementing CSPAPs. Despite limited access to knowledge about CSPAPs, 72% were interested in an online professional development course related to CSPAPs.

CSPAP Opportunities Provided

In general, the survey participants expressed that PA opportunities in all five CSPAP components were implemented within their school settings. Ninety-five percent of physical educators felt they provided QPE most to all of the time, as indicated by providing MVPA 50% or more of the class time. Time (minutes per week) of PE in pre-K–12 settings varied greatly from 20 to 310 min. Some (29%) physical educators reported 41 to 60 min/week of QPE, and others reported 81 to 100 min (12%), 181 to 200 min (8%), 221 to 240 min (14%), and 241 to 260 min (8%). PA opportunities before and/or after school were provided for children and adolescents by 33% of schools, as reported by physical educators. Thirty-eight percent identified that multiple opportunities for PA were provided during the school day (organized recess, PA breaks in classrooms). The most commonly used PA resources included Fuel Up to Play 60, Five for Life, Fitness for Life, and SPARK. Physical educators reported using shared facility agreements for general PA use with sports programs (95%), community entities (65%), and nonprofit organizations (49%). The least implemented components were staff involvement in PA (e.g., trained to integrate activity in the classroom, support recess PA, staff wellness; 26%) and family and community PA events and other physical activities connected to the school (27%).

Overall, physical educators provided a variety of reasons for why they were implementing CSPAP activities. First, teachers wanted to enhance PA, skill, and fitness. One participant wrote, "I have implemented family fitness nights at each of the schools I teach at. This is a great opportunity for students to come in and practice what we work on every single day in PE class." Another reason was to increase community health and wellness knowledge. This was explained through open-ended responses such as "to help students stay healthy" and

> I believe that creating a healthier community of adults will result in setting up success for my young students and create a better economy and healthier place to live. The connections between movement and sound nutrition to better physical, mental, and spiritual health are undeniable. If not I, then who will educate my neighbors?

Next, participants wanted to utilize PA for the physical and social opportunities it provides for the faculty and staff within their school environment. One participant explained, "I enjoy helping the staff get to know one another on another level while getting an intense workout." Additional reasons for providing PA opportunities included a desire to involve parents and enjoyment in working with students; one participant wrote, "To increase student and parent activity for wellness."

Physical Educator Perceptions of Their Role and Support for CSPAPs

One component of this study was to gain an understanding of CSPAP implementation related to the role physical educators felt they took in providing PA opportunities using the CSPAP model and what support they felt they received from various stakeholders.

Perceptions of CSPAP leader roles. Respondents viewed their role to provide QPE (MVPA 50% of class time; $M = 4.87$) as important to very important. PA programs before and after school ($M = 3.68$) were viewed as moderately important to important. This idea was supported by one participant's response: "[After school PA opportunities give] the students an activity to participate in, plus be active. It prevents many students from going home and sitting around or causing trouble." Respondents felt it was moderately important to train staff to provide organized recess ($M = 3.04$), train classroom teachers to integrate PA into the classroom ($M = 3.66$), implement wellness activities for staff ($M = 3.84$), and provide family and community PA events and activities that are connected to the school ($M = 3.71$; see Table 1). In support of the CSPAP component of family and community PA events and activities, one participant described how these events provide an "opportunity for [students'] parents to get involved in the process of developing a physically active lifestyle for themselves and their child." In an open-ended response, one participant

described, "It is an expectation that I coach"; therefore, providing PA opportunities before and after school may already be a component of the physical educator role.

Despite what survey respondents felt regarding the importance of providing various PA opportunities, there was a mix of actual self-reported involvement (either supporting others in implementing or implementing themselves) in implementing various CSPAP components (see Table 2). The majority (88%) of physical educators reported they implement QPE themselves and 8% reported they support others in implementing QPE. Respondents reported implementing the following PA opportunities themselves: before and after school programs (33%), multiple opportunities for PA during school (19%), staff involvement in PA (14%), and family and community PA events and activities connected to the school (20%).

Support for CSPAPs. In school settings, support to implement or enhance PA opportunities can come from a variety of stakeholders including other PE teachers within a PE department, building administration, students, school district administration, classroom teachers within the school, parents, and community stakeholders. In terms of the degree of support from each of these stakeholders, physical educators in Idaho (see Table 3) felt often supported by other PE teachers in their department ($M = 4.21$), building administration ($M = 3.99$), and students ($M = 3.90$). Physical educators felt sometimes supported by school district administration ($M = 3.38$), classroom teachers within the school ($M = 3.32$), parents ($M = 3.43$), and community stakeholders ($M = 3.06$).

Barriers to CSPAP Implementation

Physical educators reported on the extent (never, occasionally, fairly often, very often, or always) to which they experienced various barriers to implementing PA programs outside of PE within their school settings. The time allotted in job descriptions for CSPAP implementation was fairly often, very often, or always challenging (81%), and outside commitments were fairly often or always challenging (80%) for the respondents. Physical educators reported equipment (56%), facilities (59%), and resources (65%) were fairly often, very often, or always a challenge when attempting to implement PA opportunities, and compensation was perceived to be fairly often, very often, or always a challenge for 75% of the participants.

Table 1
Percentages of Idaho SHAPE Members Who Perceive Specific CSPAP Components Should Be Included in Their Job Descriptions

CSPAP component	Not important % (*n*)	Of little importance % (*n*)	Moderately important % (*n*)	Important % (*n*)	Very important % (*n*)	*M*
Quality physical education (MVPA 50% of class time) (*n* = 91)	0 (0)	0 (0)	0 (0)	13 (12)	87 (79)	4.87
PA programs before and after school (*n* = 91)	5 (5)	9 (8)	26 (24)	31 (28)	29 (26)	3.68
Training staff to provide organized recess (*n* = 90)	17 (15)	23 (21)	20 (18)	19 (17)	21 (19)	3.04
Training classroom teachers to integrate PA into the classroom (*n* = 91)	4 (4)	10 (9)	29 (26)	30 (27)	28 (25)	3.66
Implement wellness activities for staff (*n* = 91)	4 (4)	4 (4)	28 (25)	31 (28)	33 (30)	3.84
Family and community PA events and activities connected to the school (*n* = 91)	3 (3)	10 (9)	30 (27)	26 (24)	31 (28)	3.71

Note. MVPA = moderate to vigorous physical activity; PA = physical activity.

Table 2
Percentages of Idaho SHAPE Members Who Perceive They Should Implement Specific CSPAP Components in Their Physical Education Programs (n = 91)

CSPAP component	I am not involved % (*n*)	I support others in implementing % (*n*)	I implement myself % (*n*)
Quality physical education (MVPA 50% of class time)	4 (4)	8 (7)	88 (80)
PA programs before and after school	30 (27)	37 (34)	33 (30)
Multiple opportunities for PA during school (organized recess, PA breaks in classroom)	35 (32)	46 (42)	19 (17)
Staff involvement in PA (trained to integrate PA in classroom, support recess PA, staff wellness)	39 (35)	47 (43)	14 (13)
Family and community PA events and activities connected to the school	40 (36)	41 (37)	20 (18)

Note. MVPA = moderate to vigorous physical activity; PA = physical activity.

Table 3
Percentages of Idaho SHAPE Members Who Perceive Support From Various Stakeholders to Enhance Physical Activity Opportunities in Their Schools

Stakeholders	Not supported % (*n*)	Rarely supported % (*n*)	Sometimes supported % (*n*)	Often supported % (*n*)	Fully supported % (*n*)	*M*
Other physical education teachers in the department (*n* = 86)	2 (2)	6 (5)	13 (11)	27 (23)	52 (45)	4.21
Building administration (*n* = 91)	2 (2)	7 (6)	22 (20)	28 (26)	41 (37)	3.99
Students (*n* = 90)	1 (1)	5 (5)	21 (19)	47 (42)	26 (23)	3.90
School district administration (*n* = 91)	8 (7)	11 (10)	35 (32)	27 (25)	19 (17)	3.38
Classroom teachers within the school (*n* = 91)	3 (3)	14 (13)	42 (38)	29 (26)	12 (11)	3.32
Parents (*n* = 90)	1 (1)	16 (14)	32 (29)	41 (37)	10 (9)	3.43
Community stakeholders (*n* = 88)	6 (5)	22 (19)	43 (38)	20 (18)	9 (8)	3.06

Last, support from classroom teachers and school administration were fairly, very, or always challenging for 44% and 37% of the physical educators, respectively.

Discussion

Although most survey respondents viewed some sort of involvement with CSPAP components as an important part of their role as a physical educator in a school setting, only one quarter to one third implemented CSPAP components outside of the QPE component. In addition, some felt that implementing CSPAP components other than QPE was not a part of their job in school and community settings. For the prevalence of CSPAPs and the number of Idaho adolescents who meet the recommended 60 min/day of MVPA (CDC, n.d.-a, 2013) to increase, the importance of PA opportunities outside of QPE will need to be established and physical educators will need help to utilize strategies to overcome the challenges they experience. Insufficient equipment and resources were challenges for just over half of physical educators in Idaho. Similar to the shared use agreements already utilized by some physical educators in Idaho, equipment and resources could be shared, which would help them overcome this challenge. Physical educators should take advantage of grant and funding opportunities that could provide funding to expand access to PA equipment and resources in gymnasiums and classrooms.

It is promising that some physical educators in Idaho felt some sort of positive support from various stakeholders including other physical educators, building and school district administration, and students within their school and community settings. This support (Berei, 2015; Centeio, Erwin, & Castelli, 2014; Doolittle & Rukavina, 2014) has the potential to lay the groundwork and ultimately lead to effective and successful CSPAP implementation. Survey participants expressed that they felt little to some support from classroom teachers, a barrier to implementing PA during the school day (organized recess, PA breaks in classroom, integrating PA into lessons). For Idaho adolescents to achieve daily PA recommendations, effective CSPAPs will require classroom teacher buy-in. Emerging literature (Berei, 2015; Carson, Pulling, Wolak, Castelli, & Beighle, 2014; Castelli, Carson, & Kulinna, 2014; Centeio, Erwin, & Castelli, 2014; Doolittle & Rukavina, 2014; Jones et al., 2014; Kulinna, Brusseau, Cothran,

& Tudor-Locke, 2012; Lasky et al., 2001; McMullen, Kulinna, & Cothran, 2014) supports the need to develop these collaborations to implement effective CSPAPs, as physical educators themselves cannot implement CSPAPs alone. Physical educators indicated time was a barrier when attempting to implement all CSPAP components by themselves; this was evident from the responses in that the majority of the survey participants expressed "time alloted within their job description" as a challenge to CSPAP involvement. Nearly half of physical educators support others in providing multiple opportunities for PA during school, staff involvement in PA, and family and community PA events and activities connected to the school, thus highlighting their positive perception of the need for collaboration (Berei, 2015; Carson et al., 2014; Castelli et al., 2014; Centeio, Erwin, & Castelli 2014; Doolittle & Rukavina, 2014; Jones et al., 2014; Kulinna et al., 2012; Lasky et al., 2001; McMullen et al., 2014) for effective CSPAP implementation.

The socioecological model (McLeroy et al., 1988) can be utilized in an examination of CSPAP perceptions and implementation behaviors of some physical educators in Idaho. At the lowest level, intrapersonal, there was little knowledge related to the CSPAP model, indicating a need for dissemination of CSPAP knowledge to increase awareness and understanding of the model. Overall, this may have limited the ability of the respondents to use the CSPAP model to implement PA opportunities. Next, support and collaboration are essential for effective CSPAP implementation and are factors at the interpersonal level. These factors both helped and hindered CSPAP implementation in that when support and collaboration were present, they enhanced CSPAP implementation, yet, when absent, were viewed by survey respondents as barriers to CSPAP implementation. For these physical educators, institutional factors played a role in the implementation of CSPAPs in that they found time allotted within their job descriptions as a barrier. In a school setting, these institutional factors may be affected by the rules and regulations within the school, and assistance for physical educators to overcome this barrier could include time during the school day to implement PA opportunities outside of structured PE classes, more time during the school day for recess and other PA opportunities, or time to educate and train other school staff to implement PA oppor-

tunities. According to the survey participants, community factors and relationships with organizations outside of the school enhanced PA opportunities through shared facility agreements that provided a place for students, staff, families, and community members to be physically active. Discussion and information around the outer level, public policy, by survey respondents was not directly addressed in the survey, nor did it appear in any of the open-ended answers. This is not surprising, because results at the underlying levels, such as the lack of CSPAP knowledge at the intrapersonal level, indicate it would not be appropriate to expect the discussion of information related to PA policy; without knowledge of CSPAP model, it can be assumed there would be no discussion of public policy around the CSPAP model or PA policy in school settings.

This particular research is a first step to learning more about CSPAP knowledge and implementation in Idaho. Although there was a satisfactory response rate to the electronic survey, this study has several limitations. More data need to be collected for researchers to gain a better understanding of what types of PA opportunities Idaho physical educators are providing to help children reach the recommended 60 min/day of PA. A more in-depth survey and interviews with physical educators could help researchers to better explore the complex school environments in which physical educators are providing PA opportunities, as well as identify what can help teachers implement CSPAP components effectively and successfully. Because only 59% of survey respondents reported membership within the SHAPE Idaho organization, researchers should use alternate and additional information databases to gather contact information and reach a more broad population of physical educators across the state. It will also be important for researchers to reach the physical educators who are not involved in state professional organizations, to learn not only their current knowledge and understanding of CSPAPs, but also how to help design and implement professional development opportunities that are effective for them in their school and community environments.

In conclusion, providing opportunities for CSPAP professional development is desired and warranted. Professional development about the CSPAP model itself, as well as implementation for physical educators, classroom teachers, and administrators is lacking in

Idaho; however, the level of interest in online professional development courses related to CSPAP is a positive indication for Idaho. Positive receptivity toward the notion that it is important that physical educators fulfill PA leadership roles in school settings is critical to CSPAP implementation (Berei, 2015; Bulger & Housner, 2009; Carson, 2012; Centeio, Castelli, Carson, & Beighle, 2014; Deslatte & Carson, 2014; SHAPE America, 2016). Now that CSPAPs are being promoted as the national framework for PA and PE in school settings (CDC, n.d.-b), it will be essential that this information is included in learning opportunities for physical educators. Although the majority of the survey respondents were interested in learning more about CSPAPs through professional development opportunities, 59% reported being a member of SHAPE Idaho and 30% reported being a member of SHAPE America. Encouraging more physical educators in Idaho to be involved in their state (SHAPE Idaho) and national (SHAPE America) organizations is one way to enhance professional development opportunities. Both organizations offer multiple opportunities to learn about CSPAPs through conferences, workshops, webinars, podcasts, mini-conferences, clinics, academic credit course offerings, and continuing education credits (SHAPE America, n.d.; SHAPE Idaho, n.d.). A second professional development opportunity could be through online university courses specifically related to designing and implementing CSPAPs. From these opportunities, hopefully communities of CSPAP learning can be developed to provide additional support. Research should examine effective professional development opportunities and strategies to address CSPAP with all stakeholders.

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SPORT SOCIOLOGY

Gamesmanship Beliefs and Ethical Decision Making of College Athletes

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Abstract

Almost 30 years ago Eitzen (1988) stated, "American sport is plagued with problems. Coaches engage in outrageous behaviors but if they win, are rewarded handsomely. Gratuitous violence is glorified in the media. Some athletes take drugs. Many athletes in their search for a competitive edge cheat. Sports organizations take advantage of athletes" (p. 17). In many respects, not much has changed in the past 30 years and the issues of ethical practice, wrongdoing, and sportsmanship continue to be discussed (Doty, 2006; Garbin, 2010; Garner, 2013; Harrison-Dyer, 2011; May, 2001; Robbins, 2004; Rudd & Mondello, 2006; Ryska, 2003).

Sportsmanship has been defined as "a concern and respect for the rules and officials, social conventions, the opponent, as well as one's full commitment to one's sport and the relative absence of a negative approach toward sport participation" (Vallerand, Brière, Blanchard, & Provencher, 1997, p. 198). Most individuals engaged in sport participation or who simply enjoy watching sporting events understand what sportsmanship is and what it looks like. A sporting behavior that some might consider the opposite of sportsmanship and that is more difficult to define is gamesmanship. Howe (2004) defined gamesmanship as

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> the attempt to gain competitive advantage either by an artful manipulation of the rules that does not actually violate them or by the psychological manipulation or unsettling of the opponent (or sometimes the officials), whether this be by intimidation, nondisclosure of information, outright deception, or the first alternative (instrumental use of the rules). (p. 213)

Gamesmanship consists of efforts to push the boundaries but stay within the rules, pressure to undermine an opponent's psychological readiness during competition, or otherwise rely on indirect techniques to gain a competitive advantage in sport. In essence, the practice of gamesmanship might simply depend on one's personal ethical standards and/or moral development or moral reasoning. This study seeks to explore the gamesmanship beliefs of athletes participating in the competitive environment of college athletics.

Character, Sports, and Gamesmanship

A common claim in the field of sports is that sport participation "builds character" in athletes (Doty, 2006). Based on this claim, it logically follows that athletes have the opportunity to learn a set of values that could be used to guide a person's choices in sports competition and reflect a person's development of character. Kolhberg (1973) proposed six developmental stages of moral development, including (1) obedience and punishment orientation, (2) self-interest orientation, (3) interpersonal accord and conformity, (4) authority and social-order maintaining orientation, (5) social contract orientation, and (6) universal ethical principles. Although it is beyond the scope of this paper to describe each stage, suffice to say that each stage leads to more advanced moral development. Kohlberg's theory posits that moral reasoning is the basis for ethical choices and behavior. Simply put, the more advanced a person's moral reasoning, the more likely he or she is to display sound ethical behavior.

For many years, scholars studying sport have examined ethical beliefs, moral development, and sportsmanship practices of athletes and coaches (Beller & Stoll, 1995; Doty, 2006; Hahm, 1989; Kavussanu & Roberts, 2001; Rees, Howell, & Miracle, 1990; Rudd & Stoll, 2004; Weiss & Bredemeier, 1990). Many commentators, in fact, have suggested that sports participation plays a unique and spe-

cial role in facilitating character development (Green & Gabbard, 1999; National Federation of State High School Associations, n.d.; Sage, 1990; Sandlin, Keathley, & Sandlin, 2013). On the other hand, some have questioned if sport participation builds character and instead have suggested that the longer a person engages in sport, the more negatively affected his or her moral reasoning (Bredemeier & Shields, 1984; Stoll & Beller, n.d.). In addition, there is evidence that the type of values emphasized in a competitive sport context tends to be "social values" (e.g., teamwork) important to success in that environment rather than "moral values" (e.g., integrity; Rudd & Mondello, 2006). In other words, a person's decisions related to sportsmanship are likely to be shaped not only by moral reasoning but also by competitive pressures, peer and authority figure influences, and situational strategies.

An important topic that has not been studied as extensively as sportsmanship is the concept of gamesmanship (Howe, 2004). Almost all coaches talk with their athletes about sportsmanship, fair play, and doing the "right thing," but often, while in the heat of the moment during competition, they emphasize the win-at-all-cost approach (Garbin, 2010). This approach may be found in youth league, high school, and collegiate sports (Garber, 2006; Garner, 2013). The competitive environment of sports and the drive to win are where gamesmanship comes into play and result in difficult decision making for athletes and coaches.

Strand (2014) defined acts of gamesmanship to include "arguing with officials, opposing players, opposing coaches, and opposing fans as well as breaking, bending, or failing to assist in the application of rules that are implemented to protect the integrity of the game" (p. 20). The use of trick plays that bend the rules or embarrass an opposing team is an example of gamesmanship. Such strategies can include hidden ball tricks, distraction plays, or specific plays designed to deceive the opposing players intentionally. A different example occurs when an ice hockey coach calls on a player to enter a game as the "enforcer" or "goon" to intimidate opponents or protect a teammate. The choices and strategies utilized by athletes that reflect gamesmanship shed important light on a dimension of the sport environment that has been studied little and deserves further investigation.

Recently, researchers have investigated the gamesmanship beliefs and sport decision making of high school athletes, high school coaches, and college athletes (Chen, 2014; Josephson Institute of Ethics, 2007, 2008; Sandlin et al., 2013; Strand, 2014; Strand & Ziegler, 2010). At this point, there is little information on what strategies are considered to be acceptable or unacceptable by college-level athletes in the context of gamesmanship. Further, limited information exists on how college athletes vary in their gamesmanship beliefs by relevant contextual factors (e.g., gender, type of sport). This study continues to push forward a research emphasis in this area and investigates the gamesmanship beliefs and ethical decision making of college athletes. The following research questions were investigated:

- What percentage of college athletes identify gamesmanship statements as acceptable practices in athletics?
- Is there a difference in the percentage of subjects by gender, size of institution, academic standing, and type of sport who identify gamesmanship statements as acceptable practices in athletics?

Method

Participants

The participants for this study were 455 college athletes from four universities in two rural Midwestern states in the United States. As shown in Table 1, there were more male respondents (n = 283, 62.8%) than female respondents (n = 172, 37.2%) who elected to complete the survey. With respect to academic status, a greater number of freshmen (n = 173) completed the survey than did sophomore (n = 114), junior (n = 92), and senior (n = 76) athletes. Participating athletes represented Division I (n = 158), Division II (n = 81), Division III (n = 64), and National Association of Intercollegiate Athletics (NAIA; n = 152) institutions. Finally, subjects participated in seven sports including football (n = 113), track and field (n = 82), baseball (n = 69), basketball (n = 68), softball (n = 60), soccer (n = 33), and volleyball (n = 30).

Table 1
Demographic Data

Variable	*n*	%
Gender		
Male	283	62.2
Female	172	37.8
Academic Standing		
Freshman	173	38.0
Sophomore	114	25.1
Junior	92	20.2
Senior	76	16.7
Institution		
1 - Division I	158	34.7
2 - Division II	81	17.8
3 - Division III	64	15.1
4 - NAIA	152	33.4
Sport		
1 - Basketball	68	14.9
2 - Baseball	69	15.2
3 - Football	113	24.8
4 - Softball	60	13.2
5 - Track and Field	82	18.0
6 - Volleyball	30	6.6
7 - Soccer	33	7.3

Instrumentation

The Josephson Institute of Ethics developed a survey entitled Values, Attitudes, and Behavior in Sport. The survey for this study was adapted from the Josephson Institute survey and used to collect the data for this study. Permission was obtained from the Josephson Institute to use the instrument. The survey consisted of 25 sportsmanship and gamesmanship statements that asked individuals responding to indicate, using a 4-point Likert scale, if an action was clearly acceptable (1), acceptable (2), unacceptable (3), or clearly unacceptable (4). The survey also included four demographic items including gender, academic status, institution, and sport type. A reliability assessment of the gamesmanship survey questions was con-

ducted (Cronbach's α = .94), which indicated a high consistency and reliability for the statements on the survey instrument.

The survey was further validated for content, construct, and face validity by a panel of experts with experience in survey research and who were knowledgeable in the field of sport sociology. Additionally, this survey or adaptations of the survey have been used in previous research (Chen, 2014; Josephson Institute of Ethics, 2008; Sandlin et al., 2013; Strand, 2014; Strand & Ziegler, 2010).

Procedure

The university institutional review board (IRB) approved this research protocol prior to data collection. Upon IRB approval, researchers contacted coaches of the various teams at each institution, informing them of the purpose of the study and asking if they would be willing to allow the researchers to attend a practice to collect data. Upon approval, researchers visited the sport teams at each of the institutions. At the team meetings, athletes were informed of the purpose of study, asked to read and acknowledge their willingness to participate on a consent form that was approved by the IRB, and then completed the survey. All individuals who were surveyed were at least 18 years of age.

Analysis of the Data

Completed surveys were collected and data were entered into the SPSS (version 21) for analysis. To analyze the data, the researchers used statistical procedures including crosstabs to determine percentages and a contingency chi-square test to explore statistical differences for gender, academic status, institution size, and sport. For further analysis, the responses were combined into two categories: clearly acceptable/acceptable (aka acceptable) and unacceptable/clearly unacceptable (aka unacceptable). The researchers used a crosstabs analysis and Pearson chi-square tests of association to identify statistical significance within the variables.

Results

Table 2 highlights the survey statements related to gamesmanship and the percentage of college athletes who identified the statements as clearly acceptable/acceptable. The Pearson's chi-square test of association found significant differences at the $p \leq .05$ level, iden-

tifying the actions as clearly acceptable/acceptable or unacceptable/clearly unacceptable within gender for all but seven of the gamesmanship statements (Statement 4: "The idea that it's wrong to 'run up the score' is outdated. A team should continue to score as many points as they possibly can even when the outcome is no longer in doubt"; Statement 11: "After scoring, a player does an elaborate showboat dance in front of the opponent's bench"; Statement 15: "On the winning point of the game, a volleyball player touches the ball before it goes out, but the referee misses the touch. The player says nothing"; Statement 17: "In tennis, a ball is called out though the player is certain it hit the line. The player says nothing and takes the point"; Statement 18: "In soccer, a player deliberately fakes a foul hoping the best player on the other team will be red carded and removed from the game"; Statement 20: "In a game, an official makes a mistake in the score. The coach who benefits says nothing"; Statement 21: "Before an important game, a coach receives an anonymous envelope with an authentic playbook of the opponent. The coach uses the playbook in preparing his/her team"). For each of the 18 gamesmanship statements in which significant differences were identified by gender, female athletes were consistently more likely to identify the action as unacceptable/clearly unacceptable than male athletes. Thus, a consistent association was found between gender of the athlete and the likelihood of finding a suggested gamesmanship action to be acceptable, with a higher percentage of male athletes than female athletes responding that particular actions would be acceptable for each item where differences existed.

Table 2
Percentage of College Athletes Who Believe the Statement Is Clearly Acceptable or Acceptable

	Statement	%
1	In a contact sport, a coach instructs players to go after the injured shoulder of the other team's leading player to slow him/her down or to get him/her out of the game.	17.4
2	In baseball, a key player for X is hit by a pitch. In retaliation, X's coach orders his pitcher to throw at an opposing hitter.	20.2
3	In a contact sport, an athlete deliberately seeks to inflict pain on an opposing player to intimidate him.	29.9

Table 2 (cont.)

	Statement	%
4	The idea that it's wrong to "run up the score" is outdated. A team should continue to score as many points as they possibly can even when the outcome is no longer in doubt.	45.6
5	In a sport where certain types of contact with an opponent is illegal (e.g., holding, hand-checking, pushing, or grabbing), a coach teaches his or her players to violate the rules in ways that will be least likely to be detected.	26.2
6	In baseball/softball, a pitcher deliberately throws at a batter who homered the last time up.	16.0
7	Effective taunting and trash-talking that throws an opponent off his/her game is a legitimate part of competitive sports.	51.2
8	In a sport where only a certain number of team time-outs are allowed, a coach with no time-outs left instructs a player to fake an injury to get an "official" time-out.	16.2
9	In ice hockey, a coach sends in a player to intimidate opponents and protect his own players.	71.9
10	An athlete, who knows other athletes have done so without getting caught, illegally alters his/her equipment (e.g., hockey stick, baseball bat) to gain an advantage.	7.0
11	After scoring, a player does an elaborate showboat dance in front of the opponent's bench.	22.7
12	In basketball, player X is fouled. Player Y, the team's best free throw shooter, goes to the line undetected by the ref.	14.3
13	A coach instructs a groundskeeper to alter the field if the coach believes it will give his/her team an advantage (e.g., soaking a field to slow down opponents, sloping a foul line to keep bunts fair, letting grass grow long, etc.).	17.3
14	In soccer, during a penalty kick, a goalie, hoping the referee will not call it, deliberately violates the rules by moving forward three steps past the line before the ball is kicked.	20.7
15	On the winning point of the game, a volleyball player touches the ball before it goes out, but the referee misses the touch. The player says nothing.	65.9
16	A coach argues with an official intending to intimidate or influence future calls.	47.9

Table 2 (cont.)

	Statement	%
17	In tennis, a ball is called out though the player is certain it hit the line. The player says nothing and takes the point.	65.7
18	In soccer, a player deliberately fakes a foul hoping the best player on the other team will be red carded and removed from the game.	27.0
19	While on the bench, players boo, taunt, and jeer opponents.	33.7
20	In a game, an official makes a mistake in the score. The coach who benefits says nothing.	35.4
21	Before an important game, a coach receives an anonymous envelope with an authentic playbook of the opponent. The coach uses the playbook in preparing his/her team.	28.0
22	A coach deliberately swears at an official to get thrown out of the game in order to energize his/her team.	38.7
23	To motivate players, a coach uses profanity and personal insults while coaching.	29.5
24	After making a great play, an athlete pounds his/her chest boastfully and does an "in your face" celebration dance in front of an opponent.	35.0
25	A coach, knowing the star player on the other team is a hothead, instructs his/her team to taunt, provoke, and foul the star to get the player to react and get thrown out of the game.	55.1

When athletes were compared by size of the institution where they participated, Pearson chi-square tests revealed statistically significant differences at the $p \leq .05$ level for all but three gamesmanship statements (Statement 4: "The idea that it's wrong to 'run up the score' is outdated. A team should continue to score as many points as they possibly can even when the outcome is no longer in doubt"; Statement 15: "On the winning point of the game, a volleyball player touches the ball before it goes out, but the referee misses the touch. The player says nothing"; and Statement 17: "In tennis, a ball is called out though the player is certain it hit the line. The player says nothing and takes the point"). In response to gamesmanship examples for all other statements, athletes at smaller collegiate

institutions (e.g., NAIA school) were significantly more likely to find gamesmanship practices to be acceptable than were college athletes at larger institutions. Consistently, college athletes at the Division I and II levels (larger institutions) were more likely to respond that particular gamesmanship examples were unacceptable than athletes at the Division III or NAIA level.

When respondents were compared based on academic status (year in school), Pearson chi-square test statistics revealed statistically significant differences at the $p \leq .05$ level for only three gamesmanship statements (Statement 2: "In baseball, a key player for X is hit by a pitch. In retaliation, X's coach orders his pitcher to throw at an opposing hitter"; Statement 15: "On the winning point of the game, a volleyball player touches the ball before it goes out, but the referee misses the touch. The player says nothing"; Statement 24: "After making a great play, an athlete pounds his/her chest boastfully and does an 'in your face' celebration dance in front of an opponent"). In the first example, junior- and senior-level athletes, compared to freshman and sophomore athletes, were significantly more likely to indicate a baseball coach's order to throw the ball at an opposing player after a teammate had been hit was acceptable. Senior-level athletes were also more likely than athletes in earlier grades to agree Statement 15 was acceptable and a player could say nothing about a missed foul on a game-winning point. Finally, college athletes at the freshman through junior levels were more likely than senior athletes to agree that "showboat" behavior in front of opposing athletes was acceptable (Statement 24). However, in all other gamesmanship examples that were provided, the college athletes expressed similar levels of acceptance or nonacceptance regardless of their year in school.

A final examination of college athlete responses related to gamesmanship used a contingency table analysis and Pearson chi-square tests to investigate differences by type of sport. Due to the length and complexity of the significant differences by sport type across different gamesmanship practices, the full results of this analysis are not detailed here and are the subject of a separate study. However, in general when responses were compared across the seven sports that college athletes were engaged in, the Pearson chi-square tests revealed that statistically different patterns existed by sport type for

21 of the 25 gamesmanship statements. No significant differences at the $p \leq .05$ level were observed by sport type for four of the gamesmanship statements (Statement 4: "The idea that it's wrong to 'run up the score' is outdated. A team should continue to score as many points as they possibly can even when the outcome is no longer in doubt"; Statement 11: "After scoring, a player does an elaborate showboat dance in front of the opponent's bench"; Statement 12: "In basketball, player X is fouled. Player Y, the team's best free throw shooter, goes to the line to shoot the free throw undetected by the referee"; Statement 21: "Before an important game, a coach receives an anonymous envelope with an authentic playbook of the opponent. The coach uses the playbook in preparing his/her team"). Thus, college athletes across sport type demonstrate roughly similar levels of agreement on the acceptability of these four gamesmanship practices (i.e., running up the score, showboating, not informing the referee of a mistake, and using insider information to prepare for a contest). On all other items, however, there is distinct variation in how college athletes respond to the acceptability of particular scenarios depending on the type of sport being played and the context of the gamesmanship example.

Discussion

In a general sense, college athletes' responses to the survey statements indicated they would most often exhibit proper ethical decision making and gamesmanship for the actions the statements described. In fact, 68% (17 out of 25) of the gamesmanship scenarios suggested were deemed to be acceptable by less than one third of the college athletes (≤ 35%). However, for five of the specified gamesmanship statements, the athlete responses were quite different (Statement 7, 51.2%; Statement 9, 71.9%; Statement 15, 65.9%; Statement 17, 65.7%; and Statement 25, 55.1%), with more than 50% of the respondents indicating they found the action described to be acceptable. Three of these statements deal primarily with the practice of mental intimidation or "psyching out" an opponent, including effective verbal sparring or "trash-talking" (Statement 7), sending in a player to harass an opponent or protect one's own player (Statement 9), or instructing players to taunt or harass a player to provoke a frustrated reaction (Statement 25). Because mental toughness is often considered to be a component of successful athletic endeavor, such

gamesmanship strategies are designed to challenge an opponent's psychological strength and achieve a competitive advantage (Howe, 2004). It may be that college athletes are more inclined to frame such practices as acceptable because these practices push boundaries but do not directly violate rules, deceive, or cause bodily harm. The two other statements directly involve referee mistakes and lack of player disclosure, both dealing with when a referee misses a player violation or a technical call that would change a point (Statements 15 and 17). Because it is often argued that referees in sport are "human" and will make enough mistakes that the consequences will "even out" for each side, athletes may be prone to believe that it is the referee's responsibility to enforce rules rather than their own responsibility and thus consider lack of disclosure as acceptable (Strand, 2014).

These findings highlight the contrast between two patterns identified in relationship to young athletes, sport participation, and ethical decision making. First, Kohlberg's (1973) theory and developmental science suggest that an individual's cognitive ability and moral development tend to become more sophisticated as a person grows older. Conversely, it has been suggested that an athlete's moral reasoning diminishes the longer he or she participates in sport (Bredemeier & Shields, 1984). The study does not explicitly include high school students, but the findings advance a comparison between the two groups (high school vs. college) due to these contrasting ideas. Specifically, this study's findings support previous research about gamesmanship and ethical decision making in that college athletes are more likely to accept questionable behaviors than are high school students (Sandlin et al., 2013; Strand & Ziegler, 2010). Additionally, this study clearly shows that male athletes are more likely to accept questionable behaviors in the context of gamesmanship than are female athletes (Chen, 2014; Sandlin et al., 2013). In addition, these findings parallel the findings of sportsmanship research (Bredemeier & Shields, 1984; Stoll & Beller, n.d.) in that college athletes are less likely to display behaviors of sportsmanship than are high school athletes and male athletes less so than female athletes. Beyond these basic findings, the data from this study suggest that perhaps the reality of ethical decision making and gamesmanship at the collegiate level of athletics is more complex.

With regard to gender, the findings show that male and female college athletes think similarly with regard to their levels of acceptance of about a third (28%) of gamesmanship practices. Whatever the level of acceptance, men and women do not differ in their judgments regarding practices that include running up the score (Statement 4), showing off (Statement 11), not correcting referee mistakes (Statements 15, 17, and 20), faking a foul (Statement 18), or using insider information to prepare for a team (Statement 21). But on the other two thirds of the statements, the responses of male athletes showed that they were typically 1.5 to 3 times more likely than female athletes to find particular gamesmanship strategies to be acceptable, when the two groups differed. However, this is complicated by the fact that male and female athletes may respond differently to some gamesmanship scenarios more specific to the sport types in which they compete at the collegiate level, such as football or hockey (commonly participated in by men). This may require further investigation.

At the collegiate level, the sports environment changes to a degree and college athletes may become more attuned to a "social values" perspective (teamwork, loyalty, hard work, etc.) on their choices in athletic competition than a "moral values" perspective (honesty, respect, compassion, etc.; Rudd & Mondello, 2006). Why might this be so? College athletes are often put in difficult situations because of the high pressure to win. The prestige of championships for universities, the job advancements for coaches, the financial incentives for athletic departments, and the branding and merchandising of team apparel combine to blur the lines of what is right and what is acceptable for athletes during competition. At the same time, coaches often talk about doing the right thing and encourage their athletes to maintain high moral and ethical standards; at the same time, coaches promote a motto of "whatever it takes to win." Because college athletic programs are often under the microscope of local fan and media scrutiny, particularly as the visibility of a program increases, some programs may emphasize ethical issues in the context of gamesmanship more stringently to athletes. We found it interesting that the findings in this study showed that college athletes at the Division I and II levels consistently identified certain gamesmanship practices as unacceptable more often than athletes

at smaller institutions (Division III, NAIA levels). This finding again raises the issue of context for the college athlete and its effect on ethical perspectives and training, as larger programs may have more staff and greater expectations to abide by stringent external regulations related to sportsmanship.

Although much has been written about positive youth development through sport participation at the youth level (Brunelle, Danish, & Forneris, 2007; Camiré, Forneris, Trudel, & Bernard, 2011; Camiré & Trudel, 2013; Miller & Strand, 2015), little work has been done with college athletes. One might ask, what role do college coaches play in ensuring their athletes make good decisions, and in fact, is it even the coaches' responsibility to ensure such? At the collegiate level, coaches have an extended and intensive opportunity to work with athletes and shape their developing views on ethics in sport and gamesmanship practices. It might be hypothesized that increased age, maturity, and exposure to coaching would result in refined ethical decision making by college athletes, but again the contrasting perspective that time in sport simply correlates with reduced moral reasoning shows up as an issue. For this study, no differences were found between college athletes of freshman, sophomore, junior, and senior status on their judgments of acceptable gamesmanship practices except for three items. Strand (2014) questioned high school coaches regarding their gamesmanship beliefs and found statistically significant differences between the responses of coaches and those of high school athletes. In fact, few of the high school coaches supported the gamesmanship situations as being acceptable. So, although the high school coaches and high school athletes indicated differing views of what is acceptable, the role coaches played in fostering the views of their athletes is not known. In the aforementioned article (Strand, 2014), high school coaches were not asked if they intentionally tried to foster positive development, good decision making, or gamesmanship behaviors.

The intentionality of college coaches in fostering awareness of and adherence to ethical practices in gamesmanship among college athletes is certainly a factor in the developing perspectives of young athletes. College coaches, unlike their high school counterparts, have a unique opportunity to affect attitudes in that they or their support staff are in contact with their athletes many hours of a day

through practice, conditioning, strength training, and study tables. The opportunities to affect attitudes and beliefs are limitless and often depend on the culture of a team or athletic department that has been established and fostered. However, because they have such close affiliations with their athletes, they need to be careful; their words, actions, and other cues may be analyzed, interpreted, and sometimes embedded into the minds of young athletes and may be misinterpreted, misused, contorted, or negatively changed (Strand, 2014).

On the other hand, it is perhaps naïve to think that a coach or coaching staff can change beliefs and questionable behaviors that have been fostered since early days in youth sports and sometimes quasi-encouraged by parents, coaches, fans, supporters, and multiple media sources. That being said, however, if coaches want to positively affect their athletes, they need to intentionally plan to do so (Dungy, 2010). As an initial step, coaches might administer a gamesmanship or decision-making questionnaire to their athletes in an attempt to identify questionable beliefs. After identifying these beliefs, coaches can intentionally plan team discussions based on the questionable beliefs. For example, the results of this study indicated that approximately 23% of the athletes believed that it is acceptable for a player to do a showboat dance in front of his or her opponent's bench after scoring. If this is a behavior a coach wants to discourage or eliminate, he or she must discuss it with athletes, because it is unlikely to disappear on its own with fans and supporters cheering the behavior and media outlets repeatedly highlighting these types of incidents.

Limitations and Conclusion

As with any project, this study has a number of limitations. First, the study findings are reliant on the honesty of the athletes who were surveyed. Next, the study relies on the interpretation of the gamesmanship statements by the athletes, and it is possible that some statements were confusing and athletes could interpret some of the terminology differently than what was intended by the researchers. Also, the individual's response may reflect an athlete's uncertainty of the rules of particular sports. If an athlete was not familiar with the rules or gamesmanship values of a given sport, he or she may not have been able to make a fair evaluation of the statement. Finally, the

survey was administered to athletes at four universities in two states, thus limiting the analysis to the athletes attending those universities.

We found value in the findings of this study and gained awareness of gamesmanship beliefs of college athletes. We anticipate further investigating the influences of athlete sport type and other factors on gamesmanship beliefs. Also, further research could enhance the topic of gamesmanship and decision making by taking a qualitative focus and asking why athletes believe certain questionable actions are considered acceptable. Because gamesmanship practices represent a common element of sport experience for young athletes, developing athletes at all levels will benefit from parents, coaches, teachers, and other role models who strive to increase awareness of ethical choices, discuss options and demonstrate positive choices, and reinforce the value of positive gamesmanship in developing character and enhancing the benefit of sport.

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YOU AND THE LAW

No Snow? No Problem! Ski Statutes Still Provide Legal Protection

Melanie E. Buckmaster and Sarah J. Young

Fakhouri v. Ober Gatlinburg, Inc.
821 F.3d 719 (6th Cir. 2016)

In August 2012, Barbara Fakhouri visited Ober Gatlinburg, a ski resort located in eastern Tennessee to vacation with her family. Ms. Fakhouri used a wheelchair to ambulate. Despite the absence of snow on the ground, the resort operated year-round with many amenities such as an amusement park, restaurant, lounge, and shopping center to captivate tourists and for visitors to enjoy. Ober Gatlinburg operates a tramway that carries visitors and skiers up and down the mountain. Fakhouri rode the tramway up the mountain without incident. On the way back down, her wheelchair got caught on the tram causing one of the wheels to break. Fakhouri sought medical treatment for injuries to her leg and neck she sustained from the accident. Subsequently, she continued to suffer as a result of the injuries to her leg.

The Complaint

Fakhouri sued Ober Gatlinburg for negligence. Specifically, she claimed the ski resort "negligently failed to ensure her safe passage on the tram" (p. 720).

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Findings

Ober Gatlinburg responded to plaintiff's claim by moving for summary judgment, claiming it was immune to this type of lawsuit under Tennessee's Ski Area Safety and Liability Act (hereafter known as the Act). Determining whether or not the Act can preclude liability of defendant(s) involves meeting the following three criteria: (1) plaintiff must be a skier or passenger on the tramway, (2) defendant must be a ski area operator, and (3) plaintiff's injuries must arise out of inherent risks on the slopes or use of any passenger tramway associated with alpine or downhill skiing. If all three of these conditions prove to be true, the Act applies.

The district court granted defendant's motion and Fakhouri appealed. She first argued that because it was August and there was no snow or winter-related activities occurring, Ober Gatlinburg was not acting as a ski area operator covered under the Act. While Fakhouri claimed no one was engaging in winter or skiing activities, this did not matter because the Act is not seasonally based nor does snow have to be on the ground for it to bar liability. Under the Act, the tramway was still part of the resort and therefore operated by the resort. Second, Fakhouri claimed she was not using the tramway with the intent to ski at the time of her accident. The court recognized the flaws in her interpretation of specific language in the statute. She misunderstood the meaning of the phrase "use of any passenger tramway associated with Alpine or downhill skiing" (p. 721) and overlooked the words "or passengers" (p. 721). The more common interpretation of "associated with" in this case was being part of a ski resort. The tramway itself was associated with the resort and alpine skiing, and therefore, the Act precluded liability. Furthermore, the Act defined a skier as someone who is present in a ski area for the purpose of engaging in the sport of skiing, or a passenger on the tramway. The passenger's intent in using the tramway is irrelevant, so the statute applied. Third, Fakhouri described her purpose for coming to the resort as one seeking participation at an amusement park and sightseeing around Gatlinburg. However, the Act negates the resort's responsibility once again by the inclusion of the term *passengers*.

Fakhouri presented two cases against Ober Gatlinburg to support her claims that the Act did not apply to her set of facts. In the first

case, *Terry v. Ober Gatlinburg, Inc.* (1998), plaintiff proved preclusion of liability claiming the Act did not apply to rental equipment. This case was of no help to Fakhouri, as the use of the passenger tramway was not part of a rental agreement. In the second case, *Albert v. Ober Gatlinburg, Inc.* (2006), plaintiff alleged the resort failed to warn visitors of changing conditions on the slopes. Fakhouri's claim did not mention anything about maintenance of the tramway or changing weather conditions, only oversight of the passengers riding it. Once again, this case was of no help to plaintiff in arguing her case.

Verdict

Because the Act immunized Ober Gatlinburg from liability for plaintiff's claim and plaintiff was not able to show the facts of her case were unique, the U.S. Court of Appeals for the Sixth Circuit affirmed the district court's grant of summary judgment for defendant.

Implications

Numerous lawsuits are filed by visitors each year claiming negligence against leisure service providers and recreation facilities. In an attempt to reduce the volume of claims, service providers might want to ask, "Was our organization negligent in providing users safety, or negligent in providing ample and crucial information to the users to be more aware of inherent risks?" While it is important for service providers to provide the safest environment possible for all users, they obviously cannot avoid every potential accident or injury that might occur on their premises. For this reason, service providers can protect their liability from negligence lawsuits by implementing three simple but important steps.

The first step is to provide their users with legible and conspicuous information regarding the inherent risks of the facility. Owners and managers of facilities should realize that not all users may be aware of the inherent (i.e., natural) risks that could result in injury. This type of communication could also discourage those users who might be tempted to use the facility regardless of their awareness. Nevertheless, service providers' focus should be on prevention rather than compensation. To use the *Ober Gatlinburg* case as an example, it cannot be concluded whether plaintiff's reason for filing the lawsuit was due to her own ignorance, or she honestly believed they owed her damages. Regardless, the ski resort could have made it clear that

the criteria of the Act were applicable. For instance, a sign positioned at the entrance of the tramway with ***Attention, skiers and passengers!*** could have briefly explained the resort is a ski area operator regardless of the season or weather conditions, and the resort is not liable for injuries occurring to any skier or passenger using the tramway. This sign should be written in terms that are understandable to a reasonable and prudent person with no knowledge of the law and be printed in a font large enough to be seen from a reasonable distance. Additionally, resort employees could distribute brochures with similar messages to passengers as they board the tram. Because the resort also contained a variety of tourist attractions, users may appreciate brochures as a way to learn more information about other amenities, as well as better understand the risks and their responsibilities as users.

The second step that service providers should take is to hire competent staff to observe the area and protect guests from apparent dangers. Employees should be properly trained to understand how best to manage inherent risks and liability. While not necessarily true in the *Ober Gatlinburg* case, staff members might be able to spot the potential for accidents before they occur if they are watching the area carefully. The most common lawsuit at theme parks and resorts is simple slip and falls with at least 25% of those situations related to rides or attractions (Powers, 2009). For example, a maintenance worker noticing a spilled drink could prevent a slip and fall accident from occurring by cleaning it up as soon as it was noticed.

The third step for service providers is to learn from past mistakes. There are so many legal issues involved in providing leisure and recreation services that experience is the key to success. In subsequent training for employees working the tram at Ober Gatlinburg, for example, past accidents related to the tramway could be discussed. After the lawsuit filed by Fakhouri, the resort should be aware that wheelchairs have the potential to get caught on the tram, causing potential injury. An example of a training principle could be having employees making sure passengers secure all loose belongings, including purses, backpacks, canes, and wheelchairs, to avoid getting caught on the tram and causing injury.

Liability claims can result in substantial financial and reputational burdens for recreation and leisure service providers. The Ober

Gatlinburg resort was fortunate to have won its case by proving it was immune from negligence under the Tennessee Ski Area Safety and Liability Act. In summary, to mitigate liability, recreation service providers should remember to inform their users of inherent risks, hire competent staff, train them appropriately, and learn from their mistakes.

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The Physical Educator

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