

PEDAGOGY

Faculty Beliefs Concerning the Preparation of Physical Education Teacher Education Students for Appropriate Practices

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Abstract

Teachers are expected to follow appropriate practices within their content areas. For physical education (PE) teachers, many of these practices are outlined in the Society of Health and Physical Educators' (SHAPE America, 2009) Appropriate Instructional Practice Guidelines, K–12. This study examined the extent to which undergraduate physical education teacher education (PETE) programs are preparing their preservice PE teachers for implementing appropriate practices. PETE faculty (N = 124) across the United States responded to an electronic survey assessing their institutions' current practices in the five constructs of Learning Environment, Instructional Strategies, Curriculum, Assessment, and Professionalism adapted from SHAPE America's (2009) Appropriate Instructional Practice Guidelines, K–12. PETE faculty generally agree that their programs are preparing students to implement appropriate practices, particularly in the area of Instructional Strategies. PETE programs may wish to examine what they are doing to prepare their majors to implement appropriate practices and develop strategies to improve any areas of weakness, as these practices are indicators of high-quality physical education.

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Like all professionals, teachers are expected to follow best practices in their field. In education, “best practices” are often referred to as “appropriate practices.” The National Association for the Education of Young Children (NAEYC, 2018) defines developmentally appropriate practices as those based on knowledge of child development and learning, what is appropriate for individual children, and what is culturally important. This framework is grounded in the research on child development and learning and in knowledge about educational effectiveness, promoting optimal learning and development (NAEYC, 2018).

There are appropriate practices for teaching in general and within specific content areas such as physical education (PE). Every child deserves developmentally appropriate experiences in PE (Graham, 1992). A developmentally appropriate PE program views motor skill development as sequential and age related, recognizes that children progress through similar sequences of motor development, and recognizes that the rates at which children progress through sequences of motor development vary (Grineski, 1992). PE is no different than any other subject taught in schools in that every child deserves to be understood, valued, and helped to learn. Athletic students and poorly skilled students alike have the same right to a positive, enjoyable, and beneficial experience in PE (Graham, 1992).

The first official document on appropriate practices in PE was published in 1992 by the National Association for Sport and Physical Education’s (NASPE) Council on Physical Education for Children (COPEC). The original document was titled *Developmentally Appropriate Physical Education Practices for Children* (COPEC, 1992) and has since been revised. It was most recently updated in 2009 and exists as three documents for the elementary, middle, and high school levels titled *Appropriate Instructional Practice Guidelines for Elementary School Physical Education* (NASPE, 2009a), *Appropriate Instructional Practice Guidelines for Middle School Physical Education* (NASPE, 2009b), and *Appropriate Instructional Practice Guidelines for High School Physical Education* (NASPE, 2009c), respectively. The Society of Health and Physical Educators (SHAPE America, 2009) published a side-by-side comparison of these three documents in *Appropriate Instructional Practice Guidelines, K–12*. This document provides expert consensus regarding many appropriate and inap-

appropriate practices observed in K–12 school PE programs. It guides teachers, administrators, and policymakers in creating and maintaining high-quality school PE. This study was based on this document.

PE teacher education (PETE) students' notions of good PE practice are often informed by their own K–12 school experience (Doolittle, Dodds, & Placek, 1993; Placek et al., 1995). Their ideas of good practice may rely heavily on what their own former PE teachers did, even if those practices included things that we as a profession view as inappropriate. Examples include having students pick teams, playing dodgeball or other human target sports in PE class, and using or withholding physical activity as punishment for misbehavior. Indeed, the need for position statements such as the *Appropriate Instructional Practice Guidelines, K–12* (SHAPE America, 2009) was identified by professionals throughout the United States who expressed concern about the widespread use of inappropriate teaching practices and curriculum, particularly with young children (Bredekamp, 1992).

PE teachers must know the difference between appropriate and inappropriate practice. A review of the literature found several studies that examined PE professionals' (including preprofessionals') knowledge of appropriate PE practices. One study investigated the knowledge and use of appropriate instructional strategies by PE teachers. Results were positive and showed that a majority of the PE teachers were knowledgeable about appropriate and inappropriate instructional strategies. Most teachers in the study reported using appropriate strategies and not using inappropriate strategies (Strand & Bender, 2011). Another study examined PETE students' knowledge of appropriate instructional strategies and found that overall, PETE students could identify appropriate practices, particularly senior PETE majors (Senne & Strand, 2009). Two studies examined PETE students' knowledge of appropriate practices in elementary school PE. Generally speaking, the PETE students tended to correctly identify appropriate practices in a survey (Barney & Christenson, 2013; Barney & Strand, 2006). A similar study examined PETE students' knowledge of appropriate practices in middle school PE. Once again, the results were generally positive in that PETE students correctly

identified appropriate practices on a survey (Barney, Christenson, & Pleban, 2015).

This information is reassuring. However, no study has investigated the preparation of PE teachers for implementing appropriate practices from the standpoint of those who train these teachers. PETE faculty have a major responsibility in preparing quality PETE students, as teacher preparation programs are the first step in improving the quality of PE as a whole (Barney et al., 2015; Barney & Strand, 2006). PETE faculty have the opportunity in the teaching and training of their majors to break a cycle of inappropriate instructional practices (Barney & Christenson, 2013). PETE programs should include NASPE's documents on appropriate practices and expose PETE students to appropriate practices throughout their courses of study (Barney et al., 2015; Barney & Strand, 2006). Therefore, this study examined the extent to which undergraduate PETE programs are preparing preservice PE teachers for implementing appropriate practices.

Method

Participants

Participants were PETE faculty ($N = 124$) who responded to an electronic survey sent to the undergraduate PETE program director at each of the 488 active PETE programs across the United States in spring 2018. The overall response rate was 25.4%. Some participants chose not to respond to all of the demographic questions included at the end of the survey; therefore, the number of responses to these questions vary slightly. In total, all 124 participants reported the gender with which they identify (about 58% female, 41% male, 1% other) as well as their academic rank (about 34% full professor, 31% associate professor, 21% assistant professor, 10% instructor/lecturer, 2% adjunct, and 2% other). The average participant had taught for approximately 21 years as a PE teacher educator not counting graduate school, and their undergraduate PETE program had about four full-time faculty members, three part-time/adjunct faculty members, and one graduate student. Table 1 shows further descriptive information regarding participants and their PETE programs.

Table 1*Descriptive Information About Participants and Their PETE Programs*

Demographic survey question	Frequency	%	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
Categorical							
1. With which gender do you identify?							
Female	72	58.1					
Male	51	41.1					
Other	1	.8					
Total	124	100					
2. What is your academic rank?							
Full Professor	42	33.9					
Associate Professor	39	31.5					
Assistant Professor	26	21.0					
Instructor/Lecturer	12	9.7					
Adjunct	3	2.4					
Other	2	1.6					
Total	124	100					
Continuous							
3. How many years have you been a physical education teacher educator, not counting graduate school?			117	0	45	21.4	10.8
4. How many full-time faculty teach in the undergraduate PETE program at your institution?			123	1	18	3.61	2.70
5. How many part-time/adjunct faculty teach in the undergraduate PETE program at your institution?			123	0	25	3.20	3.91
6. How many graduate students teach in the undergraduate PETE program at your institution?			124	0	25	.63	2.57

Note. There were 124 total respondents; however, not all respondents completed every demographic question at the end of the survey.

Procedure and Instrumentation

Approval to conduct the study was obtained from the university's institutional review board prior to data collection. For the purpose of the study, the researcher used Qualtrics to develop a survey consisting of six demographic questions and 77 Likert scale questions representing the 77 appropriate practices outlined in SHAPE America's (2009) *Appropriate Instructional Practice Guidelines, K-12*. For the Likert scale questions, participants ranked on a 5-point scale the extent to which they agreed or disagreed that their institution was preparing PETE majors to implement each of the 77 practices. Response options included 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), and 5 (*strongly agree*). For example, for appropriate practice 5.2.1, "The teacher is the physical activity expert in the school" (SHAPE America, 2009), the corresponding survey question read, "My undergraduate PETE program prepares preservice PE teachers to be the physical activity expert in the school." Participants then indicated their level of agreement with the statement.

Consistent with the *Appropriate Instructional Practice Guidelines, K-12* (SHAPE America, 2009), the questions/practices were organized into five sections: (1) Learning Environment, (2) Instructional Strategies, (3) Curriculum, (4) Assessment, and (5) Professionalism. Each section, henceforth referred to as constructs, covered specific areas of concern in PE. Examples of the many areas covered include safety, diversity, equity, and inclusion (Learning Environment construct); class organization, learning time, and teacher feedback (Instructional Strategies construct); concept knowledge, developing health-related fitness, and interdisciplinary instruction (Curriculum construct); fitness testing, grading, and program assessment (Assessment construct); and professional growth and advocacy (Professionalism construct). Breaking up the survey into these five constructs not only matched the organization of the document from which the questions were derived but also functioned to reduce survey fatigue for the participants.

A preliminary version of the survey was reviewed for content validity and for clarity and readability by two PETE faculty experts from two universities. One had over 40 years of combined teaching experience in PE and PETE and research experience involving the development of survey instruments. The other had 15 years of com-

bined teaching experience in PE and PETE. The two experts were provided with the survey and a copy of the *Appropriate Instructional Practice Guidelines, K-12* (SHAPE America, 2009) for reference. Independently, they systematically reviewed each of the 77 survey questions to be sure the questions reflected the *Appropriate Instructional Practice Guidelines, K-12* as closely as possible in terms of content and organization. They also reviewed the 77 survey questions and six demographic questions for overall clarity and readability. They provided written feedback to the researcher and changes were made to the survey questions in accordance with their feedback. Care was taken not to compromise the integrity of the original appropriate practice statements. A full copy of the survey can be obtained from the researcher upon request.

An outdated list of undergraduate PETE programs in the United States and their directors was obtained from a colleague who had conducted a study involving a survey of PETE program directors (Webster et al., 2016). Program directors were initially identified via program websites and phone calls were made to those colleges and universities whose contact person could not be determined from their website. The 488 contacts on the final list were e-mailed an invitation to participate in the survey. The e-mail contained the purpose of the study, the reason that they were being invited to participate (because they were identified as the PETE program director for their institutions), the deadline to participate, a link to the survey, and a link to opt out of the survey. A reminder e-mail was sent once per week over the next 3 weeks for a total of three follow-up e-mails. The reminder e-mails contained the same information as the original e-mail invitation. The survey period closed 1 month from the day that the original e-mail invitation was distributed.

Data Analysis

Descriptive statistics were used to analyze all demographic and Likert scale data. A Cronbach's alpha test was used to determine the reliability of the survey instrument. A paired-samples *t* test was used to analyze differences in responses between the five constructs. An independent-samples *t* test was used to determine whether responses differed based on participants' gender. A one-way ANOVA was used to analyze participant responses based on academic rank. A Pearson's correlation was used to determine differences in responses

based on years of experience, number of full-time faculty teaching in their PETE programs, number of part-time faculty in their PETE programs, and number of graduate assistants. SPSS software was used for all statistical analyses.

Results

This study was delimited to the five constructs of (1) Learning Environment, (2) Instructional Strategies, (3) Curriculum, (4) Assessment, and (5) Professionalism adapted from the *Appropriate Instructional Practice Guidelines, K-12* (SHAPE America, 2009). Table 2 shows the results of the Cronbach's alpha test for reliability. In total, the Learning Environment section of the survey included 23 questions, Instructional Strategies had 15, Curriculum had 23, Assessment had 12, and Professionalism had 4, for a total of 77 questions. The survey instrument was found to be highly reliable with internal consistencies for each section ranging from .86 to .94.

Table 2 shows descriptive statistics for participants' level of agreement with each construct. Overall, agreement was high for all five constructs. Mean level of agreement was highest for the construct of Instructional Strategies ($M = 4.53$, $SD = .50$), followed by Professionalism, ($M = 4.41$, $SD = .66$), Assessment ($M = 4.38$, $SD = .58$), Learning Environment ($M = 4.36$, $SD = .49$), and Curriculum ($M = 4.33$, $SD = .50$). At the item level, mean level of agreement ranged from 3.71 ($SD = 1.00$) to 4.80 ($SD = .51$) across all of the Likert scale questions. The mean level of agreement ranged from 3.74 to 4.71 for the appropriate practices under the construct of Learning Environment, 4.13 to 4.73 for the practices under Instructional Strategies, 3.71 to 4.80 under Curriculum, 3.98 to 4.54 under Assessment, and 4.24 to 4.50 under Professionalism.

Table 2
Survey Reliability and Descriptive Statistics for Constructs

Construct	Number of items	Cronbach's alpha	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>
Learning Environment	23	.935	124	1	5	4.36	.494
Instructional Strategies	15	.937	124	1	5	4.53	.495
Curriculum	23	.940	124	1	5	4.33	.504
Assessment	12	.941	124	1	5	4.38	.584
Professionalism	4	.855	124	1	5	4.41	.659

Table 3 shows the results of the paired-samples *t* test. A significant difference was found in mean level of agreement between the construct of Instructional Strategies and each of the other four constructs: Learning Environment, $t(123) = -7.62, p < .001$; Curriculum, $t(123) = 7.75, p < .001$; Assessment, $t(123) = 5.49, p < .001$; and Professionalism, $t(123) = 2.65, p = .009$. A significant difference was also found in mean level of agreement between the constructs of Curriculum and Professionalism, $t(123) = -2.07, p = .04$.

Table 3

Paired-Samples Test for Differences Between Constructs

Construct comparison	<i>t</i>	<i>df</i>	Sig. (two-tailed)
1. Learning Environment – Instructional Strategies	-7.62	123	.000**
2. Learning Environment – Curriculum	1.00	123	.318
3. Learning Environment – Assessment	-.599	123	.550
4. Learning Environment – Professionalism	-1.24	123	.216
5. Instructional Strategies – Curriculum	7.75	123	.000**
6. Instructional Strategies – Assessment	5.49	123	.000**
7. Instructional Strategies – Professionalism	2.65	123	.009**
8. Curriculum – Assessment	-1.78	123	.078
9. Curriculum – Professionalism	-2.07	123	.040*
10. Assessment – Professionalism	-.740	123	.461

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

Tables 4 and 5 show the descriptive statistics for level of agreement with each construct by gender and the results of the independent-samples *t* test, respectively. Two significant differences were found based on PETE faculty gender. One was between female ($M = 4.44, SD = .32$) and male ($M = 4.30, SD = .46$) faculty for the construct of Learning Environment, $t(121) = -2.09, p = .039$. The other was between female ($M = 4.63, SD = .31$) and male ($M = 4.44, SD = .44$) faculty for the construct of Instructional Strategies, $t(121) = -2.84, p = .005$. Tables 6 and 7 show the results of the one-way ANOVA and the Pearson's correlation, respectively. No statistically significant differences were found between participants for academic rank, years

of experience, number of full-time faculty, number of part-time faculty, or number of graduate assistants.

Table 4
Descriptive Statistics for Constructs by Gender

Construct	Gender	<i>M</i>	<i>SD</i>	<i>SE</i>
Learning Environment	Male	4.30	.460	.064
	Female	4.44	.324	.038
Instructional Strategies	Male	4.44	.438	.061
	Female	4.63	.314	.037
Curriculum	Male	4.30	.420	.059
	Female	4.40	.393	.046
Assessment	Male	4.31	.546	.076
	Female	4.47	.456	.054
Professionalism	Male	4.32	.621	.087
	Female	4.52	.547	.064

Table 5
Independent-Samples Test for Gender Differences

Construct		<i>t</i> test for equality of means		
		<i>t</i>	<i>df</i>	Sig. (two-tailed)
Learning Environment	Equal Variances Assumed	-2.09	121	.039*
	Equal Variances Not Assumed	-1.97	83.9	.052
Instructional Strategies	Equal Variances Assumed	-2.84	121	.005**
	Equal Variances Not Assumed	-2.69	85.0	.009
Curriculum	Equal Variances Assumed	-1.43	121	.155
	Equal Variances Not Assumed	-1.42	103	.160
Assessment	Equal Variances Assumed	-1.81	121	.073
	Equal Variances Not Assumed	-1.75	95.3	.083
Professionalism	Equal Variances Assumed	-1.91	121	.058
	Equal Variances Not Assumed	-1.87	99.0	.065

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

Table 6
One-Way ANOVA for Academic Rank Differences

Construct		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Learning Environment	Between Groups	.329	3	.110	.443	.723
	Within Groups	29.7	120	.248		
	Total	30.0	123			
Instructional Strategies	Between Groups	.150	3	.050	.200	.896
	Within Groups	30.1	120	.251		
	Total	30.2	123			
Curriculum	Between Groups	.721	3	.240	.943	.422
	Within Groups	30.6	120	.255		
	Total	31.3	123			
Assessment	Between Groups	.688	3	.229	.667	.574
	Within Groups	41.3	120	.344		
	Total	42.0	123			
Professionalism	Between Groups	1.89	3	.630	1.47	.227
	Within Groups	51.5	120	.429		
	Total	53.4	123			

Discussion

This study examined the extent to which undergraduate PETE programs are preparing their preservice PE teachers for implementing appropriate practices, as outlined in SHAPE America’s (2009) *Appropriate Instructional Practice Guidelines, K–12*. All 124 participants in the study were undergraduate PETE program directors from colleges and universities across the United States. Therefore, it can be assumed that the participants were the most likely individuals to (1) have an understanding of appropriate PE practices and (2) be familiar with the PETE curriculum at their institutions.

Overall, PETE faculty generally agree that their programs are preparing their PETE majors to implement appropriate practices. This is good news for the field and is consistent with other studies that have examined PETE students’ knowledge of appropriate practices (Barney & Christenson, 2013; Barney et al., 2015; Barney & Strand, 2006; Senne & Strand, 2009) and PE teachers’ knowledge and use of appropriate practices (Strand & Bender, 2011). In particular, faculty were significantly more likely to agree that they pre-

Table 7

Correlations Between Constructs and Years Teaching Physical Education Teacher Education, Number of Full-Time Faculty, Number of Part-Time Faculty, and Number of Graduate Students Teaching in PETE Program

Construct		Years as PETE faculty	Full-time faculty in PETE program	Part-time faculty in PETE program	Graduate students teaching in program
Learning Environment	Pearson Correlation	.000	-.109	.034	-.062
	Sig. (two-tailed)	.999	.229	.708	.492
	<i>n</i>	117	123	123	124
Instructional Strategies	Pearson Correlation	-.037	-.105	.078	-.051
	Sig. (two-tailed)	.693	.248	.390	.575
	<i>n</i>	117	123	123	124
Curriculum	Pearson Correlation	-.140	-.141	.033	-.004
	Sig. (two-tailed)	.131	.120	.719	.962
	<i>n</i>	117	123	123	124
Assessment	Pearson Correlation	-.082	-.082	.057	-.039
	Sig. (two-tailed)	.378	.370	.530	.666
	<i>n</i>	117	123	123	124
Professionalism	Pearson Correlation	.001	-.021	.008	-.024
	Sig. (two-tailed)	.990	.817	.928	.794
	<i>n</i>	117	123	123	124

pare PETE majors to implement appropriate practices in the area of Instructional Strategies than any other area. Faculty were also significantly more likely to agree that they prepare PETE majors in the area of Professionalism over the area of Curriculum.

Female faculty were significantly more likely than male faculty to agree that they prepare PETE majors to implement appropriate practices in the areas of Learning Environment and Instructional Strategies. However, it should be noted that female faculty also made up the majority of the survey respondents (approximately 58% identified as female). Responses were otherwise similar across all other demographics measured. Academic rank (full professor, associate professor, etc.), years of experience teaching PETE, and number of full-time faculty, part-time faculty, and graduate students teaching in the PETE program did not appear to make a difference in the extent to which PETE faculty believe their programs are preparing preservice PE teachers for implementing appropriate practices.

Limitations

This study had several limitations. The first is the assumption that those who responded to the survey were indeed the undergraduate PETE program directors. With 488 PETE programs, it is possible that program directors were incorrectly identified in some cases despite exhaustive efforts to update a list of active PETE programs as accurately as possible for this study. All four e-mails that were sent during the data collection period instructed recipients to forward the e-mail to the correct PETE contact person at their institution if they had been incorrectly identified. However, some unintended recipients may not have taken this step and may have responded to the survey anyway.

Another limitation is that the data are subjective, as the study relied on PETE faculty beliefs about their programs. Even though they were the program directors, it is possible that participants were not fully aware of what is (or is not) taught in every course within their PETE programs. The average undergraduate PETE program had approximately seven other instructors including full-time faculty, part-time faculty, and graduate assistants. Therefore, the faculty member who completed the survey for this study likely teaches relatively few of the undergraduate PETE courses, even if they oversee the program.

A third limitation is the relatively low response rate of 25.4% despite efforts to maximize responses to the electronic survey. The majority of undergraduate PETE program directors in the United States ultimately did not participate in the study, so the findings cannot be generalized to all PETE programs. Those who chose to participate may tend to emphasize appropriate practices in their PETE programs, which could possibly skew the responses to the survey toward agreement.

Directions for Future Research

Future research may wish to take this study a step further and examine what PETE faculty are doing to prepare their students to implement appropriate practices when they enter the field. Some faculty may spend significantly more time teaching certain appropriate practices over others. For example, some faculty may have students complete extensive projects or field experiences directly related to certain appropriate practices, whereas others may communicate these practices indirectly as a by-product of other course material. Still others might report that they “prepare” their majors for appropriate practices but may in fact teach these concepts only in passing in a single course. While it was beyond the scope of this study, having PETE faculty provide documentation would provide more detailed insight into how they are teaching these topics. Examples of documentation include course syllabi, lessons plans, assignments with rubrics, or student work samples.

Based on the results of this study and other studies (Barney & Christenson, 2013; Barney et al., 2015; Barney & Strand, 2006; Senne & Strand, 2009; Strand & Bender, 2011), one could expect to enter a K–12 school gymnasium and see appropriate practices taking place. However, this is not always the case. Plenty of PE teachers still have students playing elimination games and grade students solely for dressing out and participating, for instance. Clearly, knowledge alone does not guarantee practice. For this reason, future studies might examine PETE students’ perceptions of appropriate practices and intentions to implement them when they become PE teachers. It is possible that while generally cognizant of appropriate practices, as demonstrated in several research studies (Barney & Christenson, 2013; Barney et al., 2015; Barney & Strand, 2006; Senne & Strand, 2009), PETE students may not necessarily intend to follow these

practices, because of personal beliefs about teaching that have already developed by the time they enter teacher training that may be incongruent with appropriate practices (Doolittle et al., 1993; Placek et al., 1995). Future studies might also examine barriers that PE teachers experience in implementing appropriate practices.

Conclusion

In conclusion, this study provides a starting point for understanding whether PETE educators are adequately preparing preservice PE teachers to implement appropriate practices in their content area. It is promising that most of the undergraduate PETE program directors in this study generally felt that they were already doing so. However, approximately three quarters of PETE programs in the United States did not participate in the study and the preparation of their majors for implementing appropriate practices from the viewpoint of the faculty is therefore unknown.

PETE faculty who wish to evaluate the teaching of appropriate practices in their programs might start by formally reviewing appropriate PE practices, especially if they have not done so recently (or never done so). The average program director in this study had been teaching PETE for over 21 years not counting graduate school, but appropriate practices for PE were updated less than a decade ago from the time this study was conducted (NASPE, 2009a, 2009b, 2009c; SHAPE America, 2009). For those who have been in the field even longer, such as the participant who has been teaching PETE for 45 years, there may have been no formal statements on appropriate PE practice until well into their careers. After reviewing the most current appropriate PE practices, PETE faculty must reflect carefully on whether they are preparing their majors to implement these practices upon entry into the profession. They may then choose to develop strategies to address identified areas of weakness in their PETE programs, as each appropriate practice is an indicator of high-quality PE.

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