Preservice Teachers' Experiences and Conceptions of Appropriate and Inappropriate Instructional Practices in Elementary Physical Education

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Abstract: The purpose of the study was to examine preservice teachers' (PTs) experiences and conceptions of appropriate and inappropriate elementary physical education instructional practices. Participants included a purposive sample of 92 PTs enrolled in an introductory elementary PE methods course. A 3-item open-ended questionnaire served as the data source. The questionnaire asked PTs to indicate what practices in the PE programs they participated in during their elementary school years were appropriate or inappropriate; and to describe the future PE programs they would like their future students to participate in. The National Association for Sport and Physical Education appropriate instructional practice categories were used for a deductive content analysis to code the open-ended questionnaire items. The categories were: Learning Environment, (LE) Instructional Strategies (INS), Curriculum (CRM), Assessment (AST), and Professionalism (PRG). Data were analyzed using frequencies and percentages. Most of PTs' comments for appropriate practices that they experienced were in CRM (41%), followed by INS (35%). The highest percentage of comments for CRM and INS were in the motor skill learning experiences and class design subcategories respectively. Alternatively, the least percentage of comments were in PRG (.00%), followed by AST (4.00%). The highest percentage of comments for inappropriate practices was in LE (43.71%), followed by INS (37.09%). Furthermore, the highest percentage of comments regarding PTs' future PE programs for appropriate and inappropriate practices were in CRM (37.50%) and LE (21.65%) respectively. Conversely, the lowest percentages were both in PRG, .57% (appropriate) and 2.06% (inappropriate) respectively. PTs' reflections showed they focused on curriculum, instructional strategies, and learning environments in identifying appropriate and inappropriate practices in elementary PE.

Keywords: Instructional Practices, Physical Education, Preservice Teachers, Poisson Distribution

1. Introduction

Physical educators have minimal control over individual student characteristics, but they do have a considerable amount of control over the teaching environment (Subramanian, 2011). Teachers, according to Rink (2020), have a responsibility to develop and maintain an environment conductive to learning. The

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creation of a positive learning environment is one of the expectations established by the Interstate New Teacher Assessment and Support Consortium (InTASK) for beginning teachers (Wuest & Fisette, 2015) and is the first of five sections included in the Appropriate Instructional Practice Guidelines, K-12 document created by the National Association for Sports in Physical Education (NASPE, 2009).

Appropriate practices are defined as those that recognize children's development and changing movement abilities. A developmentally and instructionally appropriate physical education program should teach students to demonstrate competency in many movement forms and proficiency in a few movement forms and apply movement concepts and principles to the learning and development of motor skills (Graham, Holt/Hale, & Parker, 2020). Additionally, the program should exhibit a physically active lifestyle, achieves and maintains a health-enhancing level of physical fitness, demonstrates responsible personal and social behavior in physical activity settings, demonstrates understanding and respect for differences among people in physical activity settings and the understanding that physical activity provides opportunities for enjoyment, challenge, self-expression and social interaction (Graham, Holt/Hale, & Parker, 2020; NASPE, 2009). When creating a physical education program, children's development status, age, body size and skill level should be taken into account. As children have more and more opportunities to participate in physical activities the improvement of fundamental movements and motor skills will be beneficial. Skill competency creates an opportunity for children to participate in a wide variety of activities instead of a select few.

Understanding how children grow and develop physically, emotionally, cognitively as well as socially provides the necessary base to develop appropriate learning opportunities. The creation and provision of a learning environment that is developmentally and instructionally appropriate is the precursor to fostering and promoting the acquisition of knowledge, skills, and confidence to engage and enjoy a healthy physical activity (Subramanian, 2011). Creating a quality PE program requires teachers to understand appropriate pedagogical practices and motor skill development (Thomas & Thomas, 2008).

Research shows that students' attitudes and experiences during K-12 PE years are greatly influenced by former teachers (Hiebert, Morris, Berk, & Jansen, 2007). Barney and Christenson (2014), for example, reported that elementary-aged students participated in or were exposed to inappropriate instructional practices in PE. In another study of PE majors' knowledge of appropriate practices in elementary PE, the participants perceived dodgeball as appropriate for elementary students. Also, they believed students should be graded on attendance, effort, and dressing out for physical education (Barney & Christenson, 2013). Barney and Strand (2008) reported that high school students deemed it appropriate for students to serve as team captains and pick teams before the entire class. Consistent with the PE majors' beliefs in Barney and Christenson's 2013 study, and Barney, Christenson, & Pleban (2015), the high school students believed students should be graded on attendance and dressing in proper attire for class activities.

Data have revealed that past PE students felt that exercise as punishment (EAP) had a negative effect on the classroom environment and caused them to think negatively about physical activity (Barney et al., 2016). Researchers have investigated why PE teachers use EAP in the classroom if they know the implications could be harmful to the students. Some of the PE teachers that used EAP agreed that it may not be the best motivational technique for students, but they felt that it was the only way they could get their students to behave (Barney et al., 2016).

To help teachers use appropriate instructional strategies and provide activities that are appropriate, Williams (1992, 1994) created the Physical Education Hall of Shame (PEHOS). The purpose of PEHOS was to make sure professionals are providing a quality PE program and eliminating popular activities and games that do not meet the appropriate practices. To qualify for PEHOS, a game has to possess one of seven elements: absence of the purported objectives of the activity or game, potential to embarrass a student in front of the rest of the class, focus on eliminating students from participation, overemphasis on and concern about the students having "fun", lack of emphasis on teaching motor skills and lifetime physical fitness skills, extremely low participation time factors, and extremely high likelihood for danger, injury, and harm (Williams, 2015). The following list of games, which are among some of the most popular PE games of the past and present, have been included in the PEHOS: Dodgeball, Kickball, Duck, Duck, Goose, Giants, Elves, and Wizards, Relay races, Musical chairs, and Steal the Bacon. These PE games have qualified for exclusion because they are missing at least one of the objectives that have been outlined by Williams (2015). For example, in Kickball most of participation time is taken up by higher skilled students, the students who need the most practice only get about a low percent of the participation time (Williams, 2015). More games have been added to the PEHOS, such as Red Rover and Simon says, and this trend needs to continue so that not only highly skilled students receive the benefits of PE. The third aspect of appropriate teaching practices focuses on curriculum. NASPE has outlined a PE curriculum as one that provides developmentally appropriate games, concept knowledge, regular participation, health-related fitness, self-responsibility, and social skills, valuing physical activity, interdisciplinary instruction, and special events (NASPE, 2009).

1.1 Purpose of the Study

Often, physical education preservice teachers enter teacher education programs with beliefs about teaching and learning that were developed during their early K-12 years (Doolittle, Dodds, & Placek, 1993). In light of the positive association between how PE teachers identify appropriate practices and how often they use them (Strand & Bender, 2011), teacher educators need to assist preservice teacher examine their experiences and conceptions of appropriate practices in elementary PE. Therefore, the purpose of the present study was to examine preservice teachers' experiences and conceptions of appropriate and inappropriate elementary physical education instructional practices. Knowledge of teachers' experiences and conceptions of what are appropriate or inappropriate elementary physical education instructional practices would be useful to teacher educators and curriculum designers. Teacher educators would better understand why preservice teachers accept or reject some practices and perspectives of their teacher education programs. In addition, it would help PETE faculty better understand how to prepare their PE majors in appropriate instructional practices (Barney et al., 2015). The results of the project also seek to bring to light the degree of congruity (or lack thereof) between recommended instructional practices and those utilized by teachers.

1.2 Research Questions

The research questions that guided the study included:

1. What are preservice teachers' experiences of appropriate and inappropriate instructional practices in elementary physical education?

2. What are preservice teachers' conceptions of appropriate and inappropriate instructional practices in elementary physical education?
3. What elementary PE instructional learning experiences do preservice teachers plan to provide for their future students?
4. To what extent do the number of comments relating to appropriate instructional practices differ from those relating to inappropriate practices in PTs' future elementary PE programs?

2. Method

2.1 Participants and Setting

Participants were a purposive sample of 92 (66.30% male and 33.70% female) preservice teachers enrolled in a 3-hour semester long elementary physical education methods course in the Midwestern United States. The sample included 33.70% sophomores, 61.96% juniors, and 4.34% seniors. The elementary methods course was the first in the sequence of three methods courses in the PETE program that served as the site for the current study. The course utilized the skill themes approach (Graham et al., 2013). It consisted of lecture, laboratory activities, peer teaching sessions, and a practicum. In the practicum component of the course, PTs designed and taught a developmentally appropriate unit (4-5 lessons) of movement experiences to a group of preschoolers.

2.2 Instrument

A 3-item open-ended questionnaire served as the data source. The first and second items asked PTs to indicate what instructional practices in the PE programs they participated in during their elementary school years were appropriate or inappropriate respectively. The third item asked PTs to describe the future PE programs they would like their future students to participate in.

2.3 Data Collection and Analysis

The Human Subjects Committee of the authors' institution granted approval for the study. The researchers informed the PTs that their participation in the study was voluntary and that they may refuse participation or withdraw at any time without penalty or prejudice. Additionally, PTs were informed that their participation or lack therefore would not affect their grade in the techniques course or any other course they were enrolled in at the time of the study. After providing written consent, PTs completed the questionnaire in the classroom the first day of class.

Responses to the open-ended items were analyzed in two phases, using inductive and deductive content analyses (Patton, 2002). First, the authors analyzed the data inductively, using a priori coding. The NASPE (2009) appropriate instructional practice categories were used for a priori inductive content analysis to code the open-ended questionnaire items. The categories were: Learning Environment, (LE) Instructional Strategies (INS), Curriculum (CRM), Assessment (AST), and Professionalism (PRG). The authors read the completed questionnaires independently, identifying the respective categories and subcategories in the NASPE (2009) coding instrument. Next, the authors met and compared the categories and subcategories each had identified and resolved the differences.

Second, we did a deductive content analysis using the categories and subcategories identified in the inductive analysis. Each of the five authors independently coded six randomly selected questionnaire quantitatively using frequencies. On attaining inter-rater reliabilities of at least 85.00% for each of the questionnaire items, the fourth and fifth authors coded 53 and 39 questionnaires respectively. Next, the authors calculated the percentages for the categories and conditional percentages for each subcategory. Finally, the Poisson distribution was used to determine the difference between the frequencies of appropriate and inappropriate practices PTs planned to provide for their future students.

2.4 Difference between Two Poisson Rates

The Poisson probability law provides the probability distribution of the number of events occurring in a specified interval of time or space. The Poisson distribution is used to fit frequency data. The Poisson distribution is described by a single parameter which is the mean number of occurrences during the specified interval.

To test the difference between two Poisson rates in this project, we implemented the square root transform version of the large-sample z-test proposed in Mathews (2010) for two test statistics that can be used to test statistical hypotheses about the rate difference. The square root transform helps the test statistic approach normality for smaller sample sizes.

Large Samples are designated as those in which $N1 \times \lambda1 > 30$ and $N2 \times \lambda2 > 30$. When this sample size requirement is met, the distribution of the difference of the sample event rates as approximately normal and so it can be used as a test. If the sample size requirements above are not met, the difference of the square roots of the sample event rates tends toward normality more quickly. Thus, it can be used as a test. Readers interested in the technical details of the procedure should refer to Mathews (2010).

3. Results

3.1 Preservice Teachers' Experiences of Appropriate and Inappropriate Practices in Elementary PE

The first research question examined preservice teachers' experiences of appropriate and inappropriate elementary physical education instructional practices. Table 1 presents data on the frequencies and percentages of PTs' comments regarding their experiences with appropriate and inappropriate practices for the five categories. PTs made 249 and 151 comments they perceived to be appropriate and inappropriate practices respectively. These were practices they experienced in their own elementary PE programs. The data showed that the highest percentage of PTs' comments for appropriate practices were in the CRM (41.00%) category, followed by INS (35.00%). Alternatively, the least percentage of comments were in PRG (.00%), followed by AST (4.00%). The highest percentage of comments for inappropriate practices was in LE (43.71%), followed by INS (37.09%). In contrast, the lowest percentage of PTs' comments for inappropriate practices was in PRG (.00%), followed by AST (1.99%).

Table 1 also shows the frequencies and percentages of PTs' comments regarding their experiences with appropriate and inappropriate practices in the subcategories. The highest conditional percentage for appropriate practices was in Productive Motor Skill Learning Experiences (51.96%) under the CRM

category, followed by Class Design (44.83%) in the INS category. Conversely, the lowest percentage of 1.15% for appropriate practices were in Expectations for Student Learning, Learning Time, and Teacher Feedback, all in the INS category. The highest conditional percentage for inappropriate practices was in Productive Motor Skill Learning Experiences (85.71%) in the CRM category, followed by Assessment Use (66.67%).

Table 1: Frequencies and percentages of PTS' experiences of appropriate and inappropriate instructional practices in elementary PE

Category/Subcategory	Appropriate Practices	Inappropriate Practices
	f/%	f/%
Learning Environment (LE)	50(20.00)	66(43.71)
Establishing the Learning Environment	15(30.00)	12(18.18)
Exercise as Punishment	2(4.00)	7(10.61)
Safety	6(12.00)	18(*27.27*)
Diversity	7(14.00)	7(10.61)
Equity	4(8.00)	9(13.64)
Inclusion	5(10.00)	4(6.06)
Competition & Cooperation	11(22.00)	9(13.64)
Instructional Strategies (INS)	87(35.00)	54(37.09)
Expectations for Student Learning	1(1.15)	3(5.56)
Class Organization	7(8.05)	7(12.96)
Class Design `	39(44.83)	13(24.07)
Learning Time	1(1.15)	3(5.56)
Maximizing Participation	21(24.14)	7(12.96)
Teaching/Learning Styles	11(12.64)	10(18.52)
Teacher Enthusiasm	6(6.90)	9(16.67)
Teacher Feedback	1(1.15)	2(3.70)
Use of Technology	0(.00)	0(.00)
Curriculum (CRM)	102(41.00)	28(18.54)
Productive Motor Skill Learning Experiences	53(51.96)	24(85.71)
Concept Knowledge	2(1.96)	2(7.14)

Regular Participation	2(1.96)	0(.00)
Developing Health Related Fitness	16(15.69)	1(3.57)
Self-Responsibility/ Social Skills	15(14.71)	1(3.57)
Valuing Physical Activity	10(9.80)	0(.00)
Interdisciplinary Instruction	1(0.98)	0(.00)
Special Events	3(2.94)	0(.00)
Assessment (AST)	10(4.00)	3(1.99)
Assessment Use	1(10.00)	2(66.67)
Variety of Assessment	0(.00)	0(.00)
Fitness Testing	9(90)	1(33.33)
Testing Procedures	0(.00)	0(.00)
Reporting Student Progress	0(.00)	0(.00)
Grading	0(.00)	0(.00)
Program Assessment	0(.00)	0(.00)
Professional Growth (PRG)	0(.00)	0(.00)
Professional Learning Community	0(.00)	0(.00)
Advocacy	0(.00)	0(.00)
Total	249(100.00)	151(100.00)

3.2 Preservice Teachers' Conceptions of Appropriate and Inappropriate Practices in Elementary PE

The second research question examined PTs' conceptions of appropriate and inappropriate elementary PE instructional practices at the start of the methods course. Eight (8.70%) of the PTs incorrectly identified inappropriate instructional practices as appropriate. In contrast, all the inappropriate practices were correctly identified as such. In this section, we present sample quotes representing PTs' conceptions of what instructional practices were inappropriate but incorrectly identified as appropriate. The quotes are preceded or followed by PTs' identification numbers. All the inappropriate practices that were incorrectly identified as appropriate were in the curriculum (CRM) category. These included dodgeball, duck, duck, goose, and kickball. These games focus on eliminating students, low participation rates, and/or likelihood for harm physically or emotionally (Williams, 2014).

As one PT stated, "Dodgeball was one of the appropriate and my favorite things to do. We would be numbered off, then half the class would go to one side of the gym and the other half would go to the other side" (PT31). Another participant, PT37, incorrectly identified "Duck, Duck Goose" as an appropriate learning experience. PTs erroneously assigned three reasons for identifying these games as appropriate:

student engagement, teamwork, and development of physical abilities/skills. In terms of teamwork, one PT recounted, "Dodgeball- everyone is involved, and you have to be active otherwise you'll get hit in the face or something" (PT29). PT 14: Kickball- appropriate because it helps you understand teamwork." PT14 believed kickball developed teamwork by stating "Kickball- appropriate because it helps you understand teamwork." Explaining the roles dodgeball and kickball play in the development of physical abilities and skills, one PT wrote, "I think some of the appropriate practices I had when I was in elementary school physical education were basketball, kickball, dodgeball. These were appropriate because they worked on key skills like balance, throwing, catching, and aiming" (PT8).

3.3 Types of Instructional Experiences Preservice Teachers Would Want Planned Their Future Elementary Students to Participate in

Table 2 presents data on the types of instructional experiences PTs' planned to provide for their future elementary PE students. The table shows frequencies and percentages of the practices researchers of the current study coded as appropriate and inappropriate. PTs made 176 and 59 comments identified as appropriate and inappropriate practices respectively. The highest percentage of comments for appropriate practices was in the CRM (37.50%) category, followed by LE (34.09%). The lowest percentage of comments for appropriate practices were in AST (.57%) and PRG (.57%). The highest percentage of inappropriate practices for future programs was in the LE (21.65%) category, followed by INS (20.60%).

Table 2 also presents the frequencies and percentages of PTs' comments for the subcategories) regarding the types of experiences the PTs' planned to provide their future elementary students. We coded PTs' comments into appropriate and inappropriate practices. The highest conditional percentage for appropriate practices was in Establishing the Learning Environment under the LE category, followed by Productive Motor Skill Learning Experiences (40.91%) in the CRM category.

The highest conditional percentage for inappropriate practices was in Productive Motor Skill Learning Experiences (53.85%), followed by Variety of Assessment (33.33%) and Fitness Testing (33.33%), both in the Assessment category.

Table 2: Frequencies and percentages of appropriate and inappropriate instructional practices for PTs' future elementary PE programs

Category/Subcategory	Appropriate Practices	Inappropriate Practices
	f/%	f/%
Learning Environment (LE)	60(34.09)	21(21.65)
Establishing the Learning Environment	26(43.33)	5(23.81)
Exercise as Punishment	1(1.67)	0(.00)
Safety	7(11.67)	6(28.57)
Diversity	3(5.00)	4(19.05)
Equity	2(3.33)	3(14.29)
Inclusion	8(13.33)	2(9.52)

Competition & Cooperation	13(21.67)	1(4.76)
Instructional Strategies (INS)	48(27.27)	20(20.6)
Expectations for student learning	3(6.25)	2(10)
Class organization	8(16.67)	2(10)
Class Design	14(29.17)	6(30)
Learning Time	4(8.33)	3(15)
Maximizing Participation	12(25.00)	2(10)
Teaching/Learning Styles	0(.00)	3(15)
Teacher Enthusiasm	7(14.58)	2(10)
Teacher Feedback	0(.00)	0(.00)
Use of Technology	0(.00)	0(.00)
Curriculum (CRM)	66(37.50)	13(13.40)
Productive Motor Skill Learning Experiences	27(40.91)	7(53.85)
Concept Knowledge	2(3.03)	1(7.69)
Regular Participation	6(3.03)	0(.00)
Developing Health Related Fitness	9(13.64)	0(.00)
Self-Responsibility/Social Skills	10(1.52)	2(15.38)
Valuing Physical Activity	9(13.64)	2(15.38)
Interdisciplinary Instruction	1(1.52)	0(.00)
Special Events	2(3.03)	1(7.69)
Assessment (AST)	1(0.57)	3(3.09)
Assessment of Use	0(.00)	0(.00) 0(.00)
Variety of Assessment	0(.00)	1(33.33)
Fitness Testing	1(100.00)	1(33.33)
Testing Procedures	0(.00)	0(.00)
Reporting Student Progress	0(.00)	1(33.33)
Grading	0(.00)	0(.00)
Program Assessment	0(.00)	0(.00)
Professionalism (PRG)	1(0.57)	2(2.06)
Professional Growth	1(100.00)	2(100.00)
Professional Learning Community	0(.00)	0(.00)
Advocacy	0(.00)	0(.00)
Total	176(100.00)	59(100.00)

3.4 Difference between Number of Comments Relating to Appropriate Instructional Practices and Those Relating to Inappropriate Practices

The fourth research question examined the extent to which the number of comments relating to appropriate instructional practices differ from those relating to inappropriate practices in PTs' future elementary PE programs. The estimated Poisson rate for appropriate practices in terms of the total number of comments and each of the categories were different relative to inappropriate practices. To check whether the differences were statistically significant, we performed the square root transform version of the large-sample z-test proposed by Mathews (2010) for two test statistics. The test results indicated that apart from assessment and professionalism that the differences were not statistically significant at the 0.05 level, the rest were statistically significant at the 0.05 level. Also, the test based on the overall (combining all categories) showed statistically significant difference between appropriate and inappropriate practices. Based on the tests for the overall, learning environment, instructional strategies, and curriculum, it can be concluded that PTs planned to provide more appropriate than inappropriate instructional strategies for their future elementary PE students.

Table 3 Difference between two poisson rates for appropriate and inappropriate instructional practices

Category	Appropriate Practices			Inappropriate Practices			Square Root Transform Test		
	f_1	N_1	$\hat{\lambda}_1$	f_2	N_2	$\hat{\lambda}_2$	$\hat{\lambda}_1 - \hat{\lambda}_2$	z	p-value
Total (Overall)	176	92	1.913	59	92	0.641	1.272	7.90	0.0000
Learning Environment	60	92	0.652	21	92	0.228	0.424	4.47	0.0000
Instructional Strategies	48	92	0.522	20	92	0.217	0.305	3.47	0.0003
Curriculum	66	92	0.717	13	92	0.141	0.576	6.39	0.0000
Assessment	1	92	0.011	3	92	0.033	-0.022	-1.04	0.8497
Professionalism	1	92	0.011	2	92	0.022	-0.011	-0.59	0.7210

4. Discussion

This study examined preservice teachers' experiences and conceptions of appropriate and inappropriate elementary physical education instructional practices. In this section, we discuss the main findings of the study. Most of PTs' comments on both appropriate and inappropriate practices experienced in elementary PE were in CRM and LE. In addition, most of the CRM comments were in the Productive Motor Skill Learning Experiences subcategory which is consistent with the focus of elementary— the acquisition of fundamental motor skills (Graham et al., 2013, 2020). Thus. PTs were more likely to recount learning experiences in their elementary PE classes that involved fundamental motor skills and games.

The second main finding was that PTs rarely commented on practices experienced relating to AST or PRG. Assessments are known to be scarce in physical education, so it was unsurprising that PTs did not comment on it. Lack of assessments in physical education are usually attributed to contextual factors that

include lack of time, overcrowded classes, and inadequate formal preparation in designing and conducting assessments (Hensley, 1990; Lund, 1993). Furthermore, many elementary students believe that effort (how hard they tried) should count more towards their grade than how good they were (James, Griffin, & France, 2005). A possible reason why PTs rarely commented on professionalism could be that teachers' professional activities such as professional growth or advocacy (NASPE, 2009) are not activities that are visible to students in PE classes. However, Standard 6 (Professional Responsibility) of initial PETE standards require that preservice teachers "demonstrate behaviors essential to becoming effective professionals" Society of Health and Physical Educators ([SHAPE America], 2017),

Third, PTs' misconceptions of appropriate instructional practices were in CRM. These misconceptions were related to the Hall of Shame Games (Williams, 1992, 1994) such as dodgeball, duck, duck, goose, and kickball. Students may believe that because they are moving around and physically active, it is appropriate physical education. "Understanding the difference between the two is critical to understanding why both contribute to the development of healthy, active children" (NASPE, 2009). This is consistent with the finding that 59% of college students, recently former K-12 students, considered dodgeball as an appropriate activity (Barney & Prusak, 2021).

Fourth, PTs made significantly higher number of comments regarding appropriate than inappropriate instructional practices about their future elementary PE programs, especially in LE, INS, CRM, and the overall (total). It reassuring to know that PTs' identified more appropriate than inappropriate for their future students even at the start of the methods course. PE teacher educators need to be deliberate in their quest to prepare preservice teachers acquire and implement appropriate instructional practices.

5. Implications for Physical Education Teacher Education

The findings from the present study warrant that PETE programs provide PTs with more exposure to appropriate teaching practices with emphasis on assessment (systematically teach and assess all domains (cognitive, affective and physical), using a variety of assessment and techniques). PTs also need to understand the importance of seeking new information and staying current by attending conferences as future professionals (SHAPE America, 2017), and inservice professional development programs when they become practicing teachers.

6. Future Research

The present study utilized a cross-sectional design to assess PTs' experiences and conceptions of appropriate and inappropriate practices in elementary PE. Future researchers could use a longitudinal design to examine PTs' experiences and conceptions of appropriate and inappropriate practices before and after the elementary methods course. This would help determine the impact of the methods course on PTs' conceptions of appropriate and inappropriate practices. Another suggestion would be to use a mixed-methods research methodology to assess PTs' experiences and conceptions of appropriate and inappropriate practices in elementary PE. The use of closed-ended items would allow researchers to assess PTs' knowledge of predetermined appropriate and inappropriate practices, while interviews would provide insight to PTs' reasons for identifying statements as appropriate or inappropriate. Finally, a comparative

study of PTs' experiences and conceptions of appropriate and inappropriate instructional practices in elementary, middle, and secondary PE would be worth investigating.

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