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METHODOLOGY

Frequency and Type of Reinstruction Strategies Used by Paraprofessionals and Licensed Teachers in Elementary Physical Education Settings

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Abstract

Unqualified paraprofessionals are teaching many elementary physical education (PE) programs around the United States. These teachers have neither the experience nor the education to provide quality instruction to students. Few researchers have identified the essential nature of teacher feedback in teaching motor skills, and it has been hypothesized teachers with little training may be less likely to give effective feedback to students. The purpose of this study was to examine the frequency and type of reinstruction strategies used by paraprofessionals and licensed teachers in elementary PE settings using a modified self-assessment feedback instrument (SAFI). Two licensed PE teachers and two paraprofessionals from the same school district in the western United States were observed four times using the SAFI tool. All 20 lessons were analyzed to understand the differences in the type and fre-

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quency of feedback between licensed PE teachers and paraprofessionals. ANOVA results indicate a significant difference between the type and frequency of feedback given by the groups. Overall, licensed teachers most commonly employed a constructive criticism strategy for providing feedback (43.6%), and paraprofessionals primarily engaged in behavior modification (75.1%). Additionally, licensed PE teachers gave more than twice as much feedback as paraprofessionals. These findings make clear the crucial nature of undergraduate PETE programs in providing licensed teachers with the skills and experience necessary to deliver appropriate feedback in elementary PE settings. Policy makers must be aware of the discrepancies between unqualified individuals and specialists to make the best policy decisions for students.

According to the *Shape of the Nation Report* (National Association for Sport and Physical Education & American Heart Association, 2012), in 11 states, certification is not required to teach elementary physical education (PE). This translates to thousands of students who may not be receiving quality PE from trained, licensed teachers. In a study of students' physical activity levels in PE classes taught by paraprofessionals (adults contracted to teach PE, but do not have a teaching license to do so), it was conclusively determined students were not participating in the recommended 50% physical activity during PE (Hannon, Destani, McGladrey, Williams, & Hill, 2013). To date, however, nothing is known about differences between paraprofessionals and certified teachers' ability to provide information to students.

The ability of physical educators to provide information to students about errors and accomplishments made in a PE class is an essential competency for PE professionals (Lee, Keh, & Magill, 1993). In fact, in the first *National Standard & Grade-Level Outcome for K-12 Physical Education*, the SHAPE America (2013) stated, "The physically literate individual demonstrates competency in a variety of motor skills and movement patterns" (p. 1). For teachers to observe, evaluate, and interpret students' performance, they need to be knowledgeable about the critical elements and common errors in sport skills and games (Hoffman, 1977). Teacher feedback is an essential element in motor skill learning and is a way for PE teachers to interact with students (Lee, Keh, & Magill, 1993). Research

has shown that it is common for PE teachers to give feedback as often as 30 to 60 times during a 30-min lesson (Siedentop, 1991). It is strongly believed that a higher rate of teacher feedback will result in greater student learning.

Teacher feedback can have many effects on student performance. These outcomes may vary according to a teacher's knowledge about certain skills or games. Studies have shown that feedback combined with instructional strategy can enhance skill and game performance (Boyce, 1991). Verbal, nonspecific, and positive feedback is widely used among PE teachers.

Faucette and Patterson (1990) found PE specialists placed a high value on providing feedback compared with paraprofessionals (nonspecialists in PE). Nonspecialist teachers spent more time monitoring, attending, and silently observing and less time on feedback. Teachers with limited PE teaching backgrounds may be less likely to produce effective feedback (Siedentop, 1991). Oftentimes, nonspecialist teachers focus more on disruptive behavior, instructional materials, and equipment rather than giving students' positive cues and feedback (Tan, 1996).

In terms of getting students active, physical education teacher education (PETE) cannot be replaced (Hannon et al., 2013). Similarly, the lack of knowledge and skills of nonlicensed PE teachers to provide effective content-specific feedback (Siedentop, 1991) may make clear the essential nature of PETE undergraduate training programs. Therefore, the purpose of this study was to examine the frequency and type of reinstruction strategies used by paraprofessionals and licensed teachers in elementary PE settings using a modified self-assessment feedback instrument (SAFI). Specifically, we addressed three questions:

- What is the difference between the amount of instructive feedback provided in an elementary PE class between paraprofessionals and licensed PE teachers?
- What is the difference between the amount of positive and negative feedback provided in an elementary PE class between paraprofessionals and licensed PE teachers?
- What are the most commonly used types of instructive feedback used by paraprofessionals and licensed PE teachers in an elementary PE setting?

Method

Participants

Participants for this study included two female paraprofessionals and two female licensed PE teachers from the same school district in the southwestern United States. Participants were chosen as a convenience sample of teachers and chosen on a volunteer basis. The paraprofessionals in this study were not licensed in PE, but have varying degrees of collegiate training as well as district and statewide convention attendance. The two licensed PE teachers in this study, however, completed a bachelor's degree from an accredited university in the field of PETE. All participants in this study had more than 5 years, and less than 10 years of teaching experience. For further information about the participants in this study, see Table 1.

Table 1
Participant Experience and Mean Frequencies Per 30-Min Lesson

Participants	Feedback categories	Mean frequencies
Paraprofessional #1 Female Elementary Education Major with an expired teaching license and 7 years of elementary PE teaching experience.	Total Reinstruction	18.4
	Total Positive	6.2
	Total Negative	12.2
	Praise/Reinstruct	2.0
	CC/Reinstruct	9.0
	Questions/Reinstruct	22.0
	Criticism/Reinstruct	0.0
	Behavior/Reinstruct	66.4
Paraprofessional #2 Female Alternate Route to Licensure (ARL) training through another state, and 5 years of elementary PE and k-12 teaching experience in a rehabilitation facility.	Total Reinstruction	23.2
	Total Positive	3.0
	Total Negative	20.2
	Praise/Reinstruct	0.0
	CC/Reinstruct	5.2
	Questions/Reinstruct	10.2
	Criticism/Reinstruct	0.0
	Behavior/Reinstruct	83.8

Table 1 (cont.)

Participants	Feedback categories	Mean frequencies
Licensed Teacher #1 Female PETE bachelor degree, and 7 years of k-12 PE teaching experience.	Total Reinstruction	44.4
	Total Positive	38.6
	Total Negative	5.8
	Praise/Reinstruct	15.4
	CC/Reinstruct	40.4
	Questions/Reinstruct	31.4
	Criticism/Reinstruct	0.0
	Behavior/Reinstruct	11.8
Licensed Teacher #2 Female PETE bachelor degree and Coaching Administration master's degree. 5 years of elementary PE teaching experience.	Total Reinstruction	42.0
	Total Positive	37.0
	Total Negative	5.0
	Praise/Reinstruct	18.8
	CC/Reinstruct	46.8
	Questions/Reinstruct	18.6
	Criticism/Reinstruct	0.0
	Behavior/Reinstruct	14.8

Instrument

SAFI allows teachers to analyze their own verbal and nonverbal feedback. It allows teachers to view their interactions with their students. The analysis of verbal and nonverbal feedback allows teachers to generate information and use it to determine areas of improvement, set personal goals, and monitor their own progress toward their attainment. SAFI in particular is used to identify the manner in which teachers/coaches give feedback during instruction (Darst, Zakrajsek, & Mancini, 1989).

The SAFI instrument has multiple strengths including allowing and challenging teachers and coaches to reflect on their current practices and encouraging growth. SAFI has effectively allowed teachers and coaches to monitor their own habits; it has been used in studies in PE (Behets, 1997; Faucette & Patterson, 1990; Ha, 1998), preservice training programs (Byra & Coulon, 1994; Mancini, Wuest, & van der Mars, 1985; Petray-Rowcliffe, Williams, Lavay, & Hakim-Butt, 2002), and extracurricular athletics (Gallo & De Marco, 2008; Mancini & Wuest, 1987; De Marco, Mancini, & Wuest, 1997; Millard, 1996).

Observer Training and SAFI Modification

We received extensive training on the SAFI instrument. The training on the observational instrument included information on the history of the tool and practice using the tool on video examples of teaching. For the purposes of this study, we used a modified version of SAFI (Figure 1). First, the SAFI instrument was modified as a device used by an external observer. The purpose for this modification was to provide teachers with quick, easy-to-understand feedback on their lesson with the hope they would choose to use the self-evaluation tool after we left. Ultimately, we hoped for teacher improvement. None of these teachers had ever used a complex instrument, so the introduction to the simplicity of the modified SAFI may have increased their desire for improvement. Second, categories were designed according to the types of reinstruction feedback. Generally, paraprofessionals lack the ability to provide effective feedback (Siedentop, 1991) and focus more on correcting disruptive behavior than providing quality cues and feedback to students (Tan, 1996). The feedback categories chosen had been previously identified as paraprofessionals' weaknesses.

Observer Name:_____ Date:_____

Teacher/Grade:_____ Length:_____

Category	0–10	11–20	21–30	31–40	41–50	Total	Percent or rate
Praise/Reinstruct							
Constructive Criticism/Reinstruct							
Questions/Reinstruct							
Criticism/Reinstruct							
Behavior Modification/Reinstruct							

Figure 1. Modified SAFI. After occurrences of feedback were tallied in the corresponding boxes, tallies within each category were combined and placed in the total. We used this information for two purposes. (1) The category totals were combined, indicating the amount of total feedback given in each lesson. Individual category totals were then divided by the total feedback, indicating the percentage of total feedback coming from each category. (2) The length of the lesson (minutes) was divided by each category total to determine the rate per minute of feedback.

Reinstruction categories in this study were taken from the original SAFI instrument and modified to include (Darst, Zakrajsek & Mancini, 1989)the following:

- **Praise/reinstruct:** Teacher encourages behavior and skills prior to reinforcing information or providing new information to the student (e.g., "That was a great throw. Remember to follow through.").
- **Constructive criticism/reinstruct:** Criticism intended to aid students in improving behavior or skills prior to reinforcing information or providing new information to the student (e.g., "You almost got it that time! Focus on stepping with your left foot.").
- **Question/reinstruction:** A question requiring a response from the students is asked for comprehension followed by information (e.g., "Where do we throw if the ball is hit to us? You're right! We throw to first base.").
- **Criticism/reinstruct:** Sarcasm or frustration followed by information (e.g., "Really? Do I have to tell you again? You're supposed to kick with the inside of your foot.").
- **Behavior modification/reinstruct:** Teacher reminds student of appropriate behavior or rules followed by information (e.g., "We are not throwing the ball. I want to see you kick with the inside of your foot.").

Categories were defined as either positive or negative modes of feedback (Siedentop, 1991; Tan, 1996). Praise/reinstruction, constructive criticism/reinstruction, and questions/reinstruction were defined as positive feedback strategies, and criticism/reinstruction and behavior modification/reinstruction were defined as negative feedback strategies.

Procedures

Prior to conducting the study, approval was obtained from the university institutional review board and the school district. Classes varied between 30 and 45 min; therefore, only the first 30 min were used to ensure consistency. Teachers were observed during five classes. Classes were divided into 10-min segments as defined in SAFI. During observations, we placed a tally in the appropriate feedback category each time the behavior occurred. Tally sheets were collect-

ed on all four teachers for five lessons each, for a total of 20 lessons observed. An example of the record sheet is shown in Figure 1.

Observer Interrater Reliability

Observers were trained in the usage of SAFI prior to beginning the study. Observers in this study used a direct observation strategy. Two researchers directly observed and coded four of the 20 lessons (20%) taught by paraprofessionals and licensed PE teachers to obtain interrater reliability. This process resulted in 90% reliability between observers.

Design and Analysis

Analyses were conducted using IBM Statistics SPSS 21.0 software. Frequencies, means, and standards deviations were calculated for each feedback category. A one-way ANOVA and effect size were conducted to determine if differences existed between paraprofessionals and licensed PE teachers.

Results

To standardize the results, data were reduced to only those which were collected during the first 30 min of each class. The means for each category for paraprofessional and certified teachers are provided in Figure 2. Means include feedback given in the first 30 min of each lesson. Results indicate that licensed PE teachers gave more total reinstruction and positive reinstruction feedback than nonlicensed paraprofessionals. Paraprofessionals gave more negative feedback than did licensed PE teachers. Paraprofessionals, however, spent the majority of time engaging in behavior modification with reinstruction.

Furthermore, comparisons between groups indicated significant differences in the categories of total reinstruction, $F(1, 2) = 69.69$, $p = .014$, $\eta^2 = .98$; total positive reinstruction, $F(1, 2) = 344.45$, $p = .003$, $\eta^2 < .001$; praise with reinstruction, $F(1, 2) = 66.64$, $p = .015$, $\eta^2 = .98$; constructive criticism with reinstruction, $F(1, 2) = 96.19$, $p = .010$; $\eta^2 = .98$; behavior modification with reinstruction, $F(1, 2) = 49.00$, $p = .020$, $\eta^2 = .96$. In contrast, comparison between groups indicates no significant differences in the categories of total negative reinstruction, $F(1, 2) = 7.22$, $p = .115$, $\eta^2 = .79$, and questions with reinstruction, $F(1, 2) = 1.05$, $p = .414$, $\eta^2 = .35$.

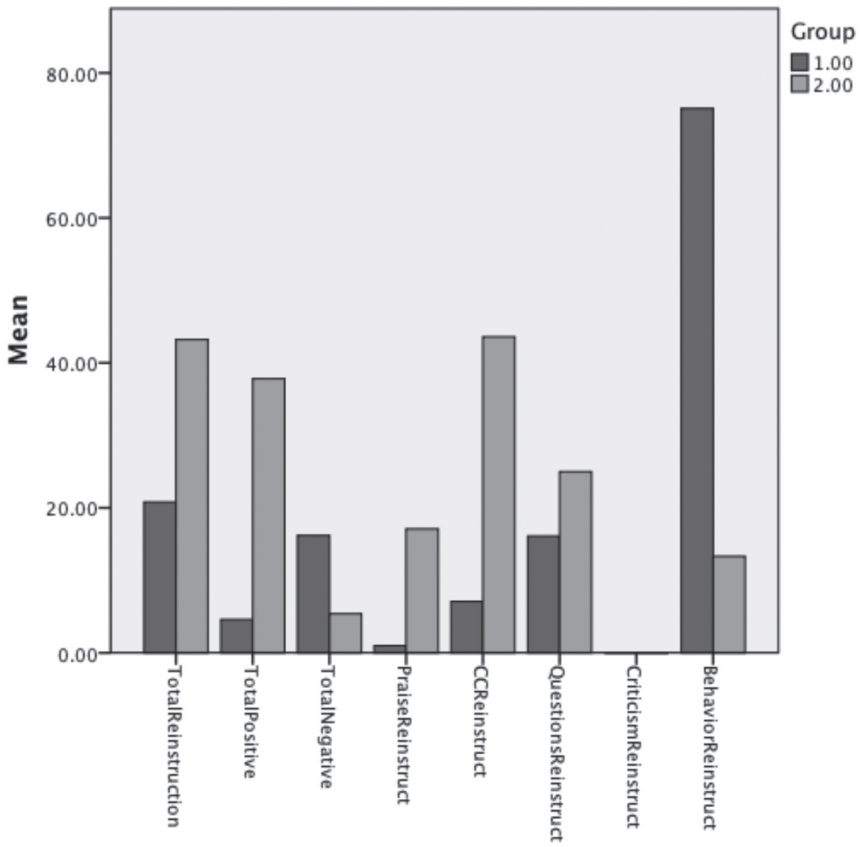

Figure 2. Mean feedback per 30-min class. Group 1 is paraprofessionals and Group 2 is licensed teachers.

Discussion

The purpose of this study was to examine the frequency and type of reinstruction strategies used by paraprofessionals and licensed teachers in elementary PE settings using a modified SAFI. The results of this study clearly indicate paraprofessionals are not providing the recommended teaching behavior for learning. Although paraprofessionals participated in training through their school districts, these trainings do not replace PETE programs in terms of preparing teachers to provide students with the information to perform a variety of skills and movements competently. Policy makers must be aware of the discrepancies between unqualified individuals and specialists to make the best policy decisions for students.

Based on the results of this study, licensed PE teachers use appropriate instructional skills more often than do paraprofessionals. Content taught by licensed PE teachers allows for opportunities to reinstruct students. However, paraprofessionals tend to play games for activity rather than skill development. Such games may not allow the opportunity to reinstruct.

In terms of answering research questions, we conclude that licensed PE teachers provide more than twice as much instructive feedback to students than do paraprofessionals. Congruent with previous studies (Hoffman, 1977; Siedentop, 1991), licensed PE teachers also provide students with about 9 times as much positive feedback and 3 times less negative feedback than do paraprofessionals. Finally, licensed PE teachers use more constructive criticism with reinstruction than any other strategy for feedback and paraprofessionals use mostly behavior modification with reinstruction (Tan, 1996). These findings make clear the crucial nature of undergraduate PETE programs in providing licensed teachers with the skills and experience necessary to deliver appropriate feedback in elementary PE settings (Hannon et al., 2013).

Although SAFI was originally designed as a self-assessment tool for teachers, the use of this instrument as a tool for outside observers produced quick, easily interpreted results to teachers. When analyzing and discussing the results of any given lesson with participants, we identified common themes. Participants appreciated the snapshot view of their lessons in terms of feedback and reinstruction. This overview of their teaching behaviors made them more aware of how they taught and where they had room to improve. Additionally, participants identified the convenience of the usage of the tool. Because of a demanding teaching schedule, participants concluded they would likely not use the tool to self-assess, but appreciated the feedback from an external observer.

A limitation of this study is the results may not be generalizable to paraprofessionals or licensed PE teachers in other settings. Although with this information, implications for practitioners would include professional development strategies for paraprofessionals. According to these results, nontrained teachers need education on how to teach skill development and how to reinstruct based on student behavior. Further research is required to generalize the results

produced in this study to other settings and to understand the effect of training on the reinstruction strategies of paraprofessionals and licensed PE teachers.

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