TEACHER EDUCATION

The Effects of Field Experience on Delivery of Feedback

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Abstract

The purpose of this study was to examine pre-service teachers' (PTs) ability to deliver feedback, which has been used as a process variable in identifying teacher-effectiveness and an established NASPE standard for beginning teachers. These questions guided the study:

1. *Will overall feedback interactions delivered by PTs reach 45 per video?*
2. *What is the nature of the feedback interactions provided by physical education pre-service teachers?*

The participants in this study were nine college-aged PTs enrolled in a required Elementary Physical Education Practicum and Methods course taught twice per week to students in Grades 3 to 6 and videotaped four times. Analysis of the videotapes was performed using the Studiocode analysis program. PTs surpassed the 45 feedback interactions by delivering an average of 56 feedback interactions per lesson. Delivery of corrective feedback was reduced from 34.78 interactions in pretest to 32 interactions during posttest. Congruent feedback increased from pretest to posttest from 6.22 to 8.55 interactions, respectively. Individual interactions were reduced from pretest (39.55) to posttest (26.55), and small group interactions in-

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creased from pretest (17.55) to posttest (21.66). Analysis of video-
tapes should continue to be integrated during field experiences to
augment PTs pedagogical skills. Future research should be focused
on the effects of specific feedback protocols on PTs delivery of feed-
back during field experiences.

Physical education teacher education (PETE) programs enhance pre-service teachers' (PTs) preparation using field experiences (FEs), which provide students the opportunity to immerse themselves in a class environment as they interact with teachers and students (Napper-Owen, Marston, Volkinburg, Afeman, & Brewer, 2008). PTs benefit from observing and assisting a cooperating teacher and conducting teaching (Larson, 2005).

Through well-designed FEs, PETE program staff develop physical education teachers who demonstrate acceptable performance as suggested by the National Association for Sport and Physical Education (NASPE, 2009). Specifically, NASPE Standard 4.3 states that beginning teachers should be able to provide effective instructional feedback for skill acquisition, student learning, and motivation.

Feedback has been described as information learners receive about their performance (Rink, 2010). Providing individuals with feedback about their actions is one of the most important ways practitioners can influence the learning process (Schmidt & Wrisberg, 2000). Feedback can have informational (corrective) and motivational functions as it can provide learners with knowledge about the nature of the task as well as energize task interest and encourage continued effort and persistence (Lewthwaite & Wulf, 2010). Corrective feedback is focused on improving the students' performance (Pangrazi & Beighle, 2013, p. 160).

Feedback interactions can be either general or specific (Siedentop & Tannehill, 2001), congruent or incongruent. Congruent feedback is directly related to what the learners have been asked to focus on (Rink, 2010). According to Lee, Keh, and Magill (1993), the effectiveness of teacher feedback may vary according to the teacher's knowledge about the skill. Teachers with limited knowledge of the skill being taught may fail to recognize and correct students' errors (Siedentop & Tannehill, 2001).

Purpose

According to Siedentop and Tannehill (2001) in their descriptive research summary, in general, teachers provide feedback with rea-

sonable frequency, often as many as 30–60 events during a 30-min period. For purposes of this study, the target of feedback interactions by PTs was 45 per lesson, following the minimum requirements set for the methods course. Other researchers such as Magill (2010) and Schmidt (as cited in Pellet, Henschel-Pellett, & Harrison, 1994) have suggested that teachers should provide feedback that is specific, congruent to the task.

Researchers such as Fishman and Tobey (as cited in Lee et al., 1993) and Silverman (as cited in Lee et al., 1993) have also suggested in the literature that feedback is most often directed at individuals rather than groups. The primary purpose of the study, therefore, was to determine the impact of a methods course on the feedback interactions of physical education PTs. Specifically, the rate and nature of feedback the PTs provided was examined, as providing feedback that is specific (rather than general) and congruent is known to be most effective with children (Graham, 2008).

Research Questions

The PTs' ability to deliver feedback was examined in this study, which has been used as a process variable in identifying teacher-effectiveness (Lee et al., 1993; Gusthart, Kelly, & Rink, 1997) and is an established NASPE standard for beginning teachers to master. The following questions were used to guide the study:

1. Will overall feedback interactions delivered by PTs reach 45 per video?
2. What is the nature of the feedback interactions provided by physical education pre-service teachers?
3. What is the impact of an elementary physical education methods course on the nature of PTs' feedback interactions?

Method

Participants

The participants in this study were nine college-aged PTs enrolled in a required Elementary Physical Education Practicum and Methods course. During a 5-week period, the PTs taught twice per week at three local schools to students in Grades 3 to 6 as part of the course requirements. Each PT had approximately 12 to 15 students with whom to work during each lesson. The schools had classes of 45 min of assigned time.

Each participant was videotaped four times. They were video-taped once a week during the 5-week experience. No videos were recorded during the third week. PTs were required to observe their own videos, code, and reflect on each one after each lesson. Coding of videos took place in the Physical Education Pedagogy Lab. PTs coded their videos using Studiocode software to analyze specific events such as activity time, instruction time, management time, wait time, and how often they provided feedback and the types (general, specific, or congruent).

Because PTs were assigned to three local area schools, a variety of units of study were taught, such as football, soccer, and volleyball. Classes were taught indoors, and schools had the appropriate amount of equipment for students to be actively involved.

Protocol

A random number from 1 to 9 was assigned to each participant, and his or her videos were analyzed in order. Participants' videos were given the number and the letter *A* or *B* to identify their two videos. The letter *A* was assigned to each PTs' first video (pretest) of the teaching experience, and the letter *B* was assigned to their last video (posttest) of the teaching experience. Videos and results were saved on a 1T My Book external hard drive. The first author, who has 3 years of experience working with Studiocode, analyzed the videos. The analysis was performed in the first author's office. Both videos of each participant were analyzed the same day—one day for each participant.

To determine interrater reliability, the three investigators coded two randomly selected videos for the nature of feedback. On attaining a Cronbach's alpha of .916, the first author proceeded to code all 18 videos.

Apparatus

Analysis was performed using a code window created in the Studiocode analysis program. The code window, designed by the primary investigator, was aligned with the purposes of the study. For purposes of this study, the amount of feedback given by PTs was observed during the instances of the video coded, by the investigator, as Activity Time.

Definition of Terms

The following terms were adapted from Graham, Holt/Hale, and Parker (2010); Rink (2010); and Schmidt and Wrisberg (2000):

Activity Time: Time spent moving as students perform activities consistent with the focus of the lesson.

Congruent Feedback: Refers to the relationship between the content of feedback, the focus of the task, and the cues the teacher gave for the task. Linked directly to student responses and used to identify key elements.

Corrective Feedback: Information on what to do or what not to do in future performances

General: Information that clarifies the intent of the performance.

Specific: Must be related to an aspect or a result of performance.

Motivational Feedback: Augmented feedback about an individual's progress toward goal achievement that energizes and directs the person's behavior.

Positive Feedback: Information regarding what is good about the performance.

Individual Feedback: Information provided directly to one student.

Group Feedback: Information provided to a small group of students.

Analysis

After each video was coded using Studiocode, the investigator pressed the Analysis button on the screen to obtain the results for each video. Data were then uploaded into an Excel spreadsheet using the specific variables for the study and then to SPSS 18.0 for analysis. A paired-samples t test was used to compare the pretest and posttest amount of interactions that PTs delivered.

Results and Discussion

Overall Feedback

The impact of a methods course on PTs' delivery of feedback was investigated in this study. Physical education encompasses a variety of activities and skills, factors affecting the delivery of feedback that must be considered in research. Simple and complex skills need different feedback, and teacher feedback may not be necessary for some skills (Lee et al., 1993).

The first research question of the study examined if the overall feedback interactions delivered by PTs reached 45 per video. The results for amount of corrective and motivational feedback provided by PTs to their students (Table 1) show that PTs delivered more corrective feedback (58.6%) than motivational feedback (40.9%). Overall, PTs' delivery of corrective feedback was slightly reduced from 34.78 interactions in pretest to 32 interactions during posttest. Results also show an increase in the amount of motivational feedback from 21.22 interactions during pretest to 25.88 interactions during posttest.

Table 1

Paired-Samples t Tests Analyses for Overall Feedback Interactions (n = 9)

Type of feedback	Pretest		Posttest		t value	
	M	SD	M	SD	t	p
Corrective	34.78	11.45	32.00	9.97	.932	.053*
Motivational	21.22	9.06	25.88	11.99	−.996	.736

*p < .1.

Overall Feedback Interactions

PTs overall performance on delivery of feedback surpassed that found by Siedentop and Tannehill (2001), whose descriptive research summary indicates that, in general, teachers provide feedback with reasonable frequency, often as many as 30–60 events during a 30-min period. In this study, PTs delivered an average of 56 feedback interactions per lesson (33 corrective and 23 motivational). These results met the overall number of interactions established at 45 feedback interactions per lesson.

Nature of Feedback Interactions

The second research question investigated the nature of the feedback interactions that PTs provided. The results for the nature of feedback interactions that PTs delivered are shown in Table 2. The highest mean amount of feedback was feedback to individuals (39.55) followed by general feedback (20.44). Conversely, the lowest mean amount was congruent feedback (6.22) followed by specif-

ic feedback (8.11). Posttest data indicate the highest mean amount of feedback was individual feedback (26.55) followed by feedback to groups (21.66). Alternatively, the lowest mean amount of post-test feedback was congruent feedback (8.55) followed by specific feedback (9.11).

The methods course had a significant impact on PTs' delivery of general feedback, but not specific, congruent, individual, or group feedback. PTs significantly (α = .1) reduced their interactions of general feedback from 20.44 interactions in pretest to 14.33 interactions in posttest. Results also show that on average PTs had only 8.11 interactions of specific feedback during pretest and 19.11 interactions during posttest.

Overall, PTs delivered more feedback to students individually, averaging 33 interactions for both videos than group feedback, which averaged 19.5 interactions. However, the individual interactions were reduced from pretest (39.55) to posttest (26.55) and small group interactions increased from pretest (17.55) to posttest (21.66).

The methods course did not significantly impact PTs' delivery of some feedback. PTs struggled with delivery of congruent feedback, obtaining the lowest amount at 6.22 interactions. When receiving congruent feedback, students hear a consistent message, allowing them to recall and apply the cue (Graham et al., 2010). Though not significant, results indicate that PTs increased their delivery of congruent feedback from pretest to posttest as they delivered 6.22 and 8.55 interactions, respectively.

Table 2
Paired-Samples t Tests Analyses for Nature of Feedback Interactions (n = 9)

Type of feedback	Pretest		Posttest		t value	
	M	*SD*	*M*	*SD*	*t*	*p*
General	20.44	8.67	14.33	5.97	2.06	.073*
Specific	8.11	3.98	9.11	7.86	−.45	.417
Congruent	6.22	2.58	8.55	7.92	−.889	.138
Individual	39.55	12.16	26.55	11.37	1.60	.682
Group	17.55	11.73	21.66	12.56	−.62	.376

*p < .1.

The third research question examined the impact of the methods course on the nature of PTs' feedback interactions. The paired-samples t test analyses for the pre- and posttest data show that the reduction in corrective feedback was significant at α = .1, whereas that for motivational feedback was not (see Table 1). A variety of factors may have contributed to the increase in motivational feedback from pretest to posttest. However, it could have been caused by PTs teaching mostly small-sided games during their last lessons of the FEs. PTs were asked to follow the skill themes approach (Graham et al., 2010), teaching fundamental movements at the beginning of their field experience and then combining them with other skills, used in more complex settings such as games.

The amount and nature of feedback that PTs delivered was evaluated in this study. The results obtained provide investigators with information needed to establish protocols for future video analyses to augment PTs development of delivery of feedback and other teaching behaviors. Ramos (2011) found that PTs felt strongly about using videotaping analysis to reflect on their teaching behaviors. PTs commented that videotape analysis allowed them to "evaluate management skills, "observe my positioning," and "observe students' behavior," among others. Similarly Pruzak, Dye, Graham, and Graser (2010) found that students felt they had received far more feedback than had they not analyzed their own lessons.

Implications for Future Research

The results from this research suggest that videotape analysis should continue to be integrated in PETE programs to enhance the development of PTs pedagogical skills, thus enabling PTs to observe the results of behavior on student work as well as evaluate dimensions of teaching (Rink, 2010). Furthermore, programs not currently using videotape analysis should consider implementing it.

One of the strengths of the current study was the use of videotape statistical analysis to obtain the results. Though data must be interpreted in context (Rink, 2010), we feel comfortable with the results obtained as an objective measurement of PTs' performances. In their study, Pruzak et al. (2010) found the use of Studiocode for analysis of event recordings to be reliable 83% of the time. However, they stated that discrepancies may occur when the interpretation of codes/labels are not clearly established. Based on their statement, clear codes were established for this study.

The present study had a small sample size ($n = 9$), which leads us to suggest the use of a larger sample size in future research projects to increase statistical power. Another suggestion would be to investigate differences, if any, in the delivery of feedback during lessons covering units of study such as football and soccer (invasion games) versus volleyball (net wall games) versus individual sports.

Future research should be focused on the effects of specific feedback protocols on PTs' delivery of feedback during FEs. A specific protocol could be aligned with the research of Sturyk and McCoy (1993), who suggested PTs benefit by concentrating and improving one area at a time rather than by dealing with several areas at once. This protocol may allow PTs to prioritize areas to be strengthened. Once areas have been prioritized, PTs can systematically focus on changing areas that need improvement.

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