Classroom Teachers’ Observations of Physical Education Lessons

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Elementary school classroom teachers continue to have primary responsibility for teaching elementary physical education. As a group, they have received little attention concerning their development of pedagogical skills in physical education. Accordingly, the purpose of this study was to describe what preservice classroom teachers observe and what perceptual processes they employ while observing physical education field lessons. The participants were seven junior elementary education majors who observed two physical education classes. Data were collected using the techniques of thinking aloud and stimulated recall interview. The constant comparative method of data analysis revealed the following three themes as characteristic of this group of preservice classroom teachers: students’ movement responses dominated their observational attention, the classroom teachers evaluated what they saw, and they observed using the perceptual process of contrast.

Although physical education in the elementary school is often a shared responsibility between the physical education specialist and the classroom teacher, recent reports indicate that the classroom teacher continues to have primary responsibility for teaching elementary school physical education (Brumbaugh, 1987; Hoffman, 1988; Royall, 1987). In those school systems that do not employ physical education teachers or curriculum resource personnel, classroom teachers may have total responsibility for the physical education instruction of their students. This fact suggests that P.E. teacher educators and P.E. teacher education researchers need to focus attention on classroom teachers.

Research

Research on Classroom Teachers

Although the physical education literature has addressed the classroom teacher as physical educator, the dominant literature has mainly focused on philosophical statements, role definitions, surveys of professional preparation satisfaction, and beliefs, attitudes, and perceptions reported by this group of teachers.

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Little inquiry has been conducted into classroom teachers’ development and use of pedagogical skills in physical education. Thus, little is known about how they execute their teaching responsibilities in physical education.

However, recent studies are beginning to inform our understanding of how classroom teachers develop and use pedagogical skills. Placek and Randall (1986) compared specialists and classroom teachers on the dimension of elementary students’ academic learning time in physical education (ALT-PE). They found no significant difference in measures of ALT-PE and reported that the scores for both groups were “at the bottom of the ranges of ALT-PE reported by other elementary studies” (pp. 162-163). Placek and Randall did note differences in the selection of appropriate learning activities, with specialists more often selecting skill practice activities that had a greater potential for feedback on motor performance.

In a descriptive study, Royall (1987) examined four classroom teachers’ teaching of physical education in relation to their undergraduate methods course. She found limited relationships between the methods course and (a) content selected to be included in the physical education program, (b) philosophical underpinnings for teaching actions, (c) specific lesson content, and (d) planning for teaching physical education lessons. Royall concluded that there were no strong connections between the physical education teaching practices of classroom teachers and their undergraduate methods course.

Research on Observation

Both studies highlight the need to know more about the teaching effectiveness of classroom teachers in the physical education setting. One way to fill this need is to examine classroom teachers’ demonstration of pedagogical skills identified as critical to teaching effectiveness. Observing is one such skill (Allison, 1987; Barrett, Allison, & Bell, 1987; Bressan & Weiss, 1982; Hoffman, 1983). Roberton and Halverson (1984) placed observing in the key, initial position of their observing/interpreting/decision-making cycle of the teaching process. The soundness of the cycle, and consequently the effectiveness of the teacher, depends first on the accuracy of the teacher’s observations.

In physical education, the major product of student attempts at learning is movement—movement that is perceptually over in a flash. Since the teaching environment is a constantly moving and therefore a constantly changing perceptual array, the difficulty in observing such an environment is increased. Jensen (1980) likened the teaching environment to the performance environment of open skills. In open-skill performance, the movement environment is unstable in terms of its temporal and spatial elements. Performance is more difficult than in a closed environment because instability creates constantly changing situations to which the performer must adjust.

Physical education teachers are continuously being presented with an unstable and changing environment that is full of rich, varied, and complex visual information. They must be able to extract information that is relevant and disregard information that is irrelevant. They do this not through passive absorption of environmental features but through an active process of seeking and exploring environmental information necessary to the perceptual task at hand (Gibson, 1969). The more unstable the environment, the more difficult the process. Thus the
importance of the teacher's ability to observe skillfully is heightened considerably in a constantly changing perceptual environment.

A growing number of studies have focused on the skill of observing as performed by teachers. This increase in research attention is an indication of the importance being placed on the teacher's ability to observe effectively. Although the observational research literature has taken a number of directions, the literature related to observing as it is performed in the physical education teaching/learning environment is the most pertinent for this study.

Belka (1988) found that as undergraduate P.E. teacher education recruits progressed through the field experience component of their teacher preparation program, they interpreted their observations more in congruence with program goals and reflected the teaching skills targeted in their current field experience. The recruits focused mainly on teaching behaviors, less on lesson content, and even less on student behaviors in their observations.

In two studies (Barrett et al., 1987; Bell, Barrett, & Allison, 1985) encompassing the first and last field experiences for a group of preservice physical education teachers, the subjects were given no guidance in what to observe. In their first observational field experience the preservice physical education teachers (a) attended to a limited spectrum of classroom events, (b) were influenced by the children's personal characteristics, and (c) reported few observations about the students' movement responses. In their last field experience the preservice teachers (a) greatly increased the number of observations, (b) observed a wider spectrum of classroom events, and (c) attended to student movement responses and teaching behaviors much more frequently. Allison (1987) also studied preservice physical education teachers in an unguided early field experience, but during the middle of their teacher education coursework. She found that observers attended to students' movement responses predominantly but noticed little detail in movement, and demonstrated rudimentary observation strategies involving where to look, what to look for, and what perceptual processes to use. All four studies suggested implications for developing observational skillfulness in preservice teachers.

Inquiry into the skill of observing as demonstrated by preservice classroom teachers appears warranted for two reasons: (a) there is little information about the development of classroom teachers' teaching skills in physical education, and (b) being able to observe skillfully is critical for teaching effectiveness. The purpose of this study was to describe what preservice classroom teachers observe and what perceptual processes they employ while observing physical education lessons.

**Method**

**Context**

The preservice classroom teacher participants in this study were seven female junior elementary education majors at a midsized state university who were enrolled in their one required 3-semester-hour physical education methods course. Immediately prior to student teaching at this university, elementary education majors block an entire semester for intensive work in teaching methodology in a number of subject matter areas. Each major was enrolled in the school term before the block-methods semester. The participants were either concurrently enrolled in other methods courses in music and art or had taken them the previous semester.
Lesson observations were made during two physical education classes taught in the urban elementary school that was designated as the field experience site for undergraduate and graduate teacher education in physical education. This observational experience was conducted during the fourth week of the semester for data gathering only and was not designed to relate specifically to other coursework field experiences.

Prior to data gathering, the preservice teachers had observed physical education lessons on two occasions at the same school for the purpose of introducing them to the approach to elementary school physical education (Logsdon et al., 1984) that was a part of their physical education methods course. On one occasion they observed the fifth grade class participating in this study. During the week preceding data gathering, a conceptual knowledge base of movement was presented to the preservice teachers in the form of a lecture and readings on Laban's conceptualization of movement as presented by Logsdon and Barrett (1984). The conceptualization is organized as a movement framework that classifies movement into four broad aspects—body, space, effort, and relationships—as well as a number of smaller dimensions within each aspect. The preservice classroom teachers were given an overview of the framework, category definitions, and visual examples emphasizing different aspects of the framework. They were also told that one use of the framework was to aid in observing and analyzing movement. However, they were not given the opportunity to practice using the framework in a field setting before data collection.

This data gathering session consisted of two 20-min lessons, one each in educational games and educational gymnastics, representative of two areas of the elementary school physical education curriculum. Both the lesson content and teaching methodologies used were consistent with the approach to elementary school physical education that was a part of the course. The movement content focus for the games lesson was dribbling a ball with a hockey stick, the emphasis being on accelerating, decelerating, and changing directions. The content focus for the gymnastics lesson was landing and rolling when dismounting from apparatus. During the course of this study, the preservice teachers revealed that they had some knowledge about gymnastics but none had any knowledge about field hockey as a game.

The physical education lessons were taught by a teacher education graduate student with several years of teaching experience. He was unknown to the observers. The class selected for the two lessons was a fifth grade of 28 children. Since the school was a field experience site, the children were accustomed to having large numbers of observers as well as videotape equipment in use during class.

Procedures

Data were collected using the research techniques of thinking aloud (TA) and stimulated recall interview (SRI). To employ the TA technique, subjects are required to verbalize what they are thinking as they perform the research task. The verbalizations would contain the content of cognitive processes used in task performance as well as their sequence of occurrence (Klinger, 1978). It could be assumed that the research task of producing verbalizations would affect the cognitive processes needed to make observations by requiring the participants to verbalize, one mode of cognitive processing, in a situation in which information was available visually through a different mode of processing. Ericsson and
Simon (1980) indicated that in situations requiring different modes of processing, one's cognitive processes may be slowed somewhat but their course and structure will remain largely unchanged, thus posing little threat to reliability. For this study, TA verbalizations were captured by audiotape recorders.

The notion of SRI is to help subjects recall an original event with accuracy by presenting them with relevant cues from that event (Bloom, 1954). Because the individual was at one time a participant in an event, and at the time of the interview is reporting on his or her participation during that event, the interview can be conducted with minimal interference on the recall of the event (Shavelson & Stern, 1981). For this study, videotapes of the lessons and the TA protocols of the lesson observations served as the relevant cues for recall. TA and SRI were employed to generate data on what was seen during the field experience lessons and on what perceptual processes were used in the observations.

The seven research participants observed from stationary positions that were close enough to each other to give them the same relative vantage point but far enough apart so as not to disturb one another as they verbalized their thoughts into tape recorders. The participants observed two 20-min lessons, games followed by gymnastics, with a 10-min break between lessons. In the directions for TA, the participants were told to say out loud what they were seeing. They were also told that they were free to comment on anything that attracted their attention and to make their comments in any way they wished, as there were no observations that should or should not be made. The participants were allowed to practice the TA technique in a prior class, and all reported being comfortable with the task. To reinforce their freedom in observing, no feedback was given on the content of the practice TA, thus avoiding the suggestion of researcher preference.

In order for the videotape to be an effective stimulus, the observers had to have the same viewing angle as the videotape camera. As only one camera was available on the day of data collection, and only three observers could be accommodated at the one camera, only three of the seven preservice teachers were able to participate in the SRI. Each of the three volunteer SRI participants was interviewed individually by the researcher within 4 days of the observations.

Typed protocols of their TA observations were additional stimuli for the preservice teachers during the SRI. They were given the opportunity to read copies of their games and gymnastics protocols at the beginning of the interview and could refer to the protocols throughout the interview as well. The SRIs were also audiotaped.

Prior to the SRI, the researcher noted particular TA verbalizations that seemed to reveal what perceptual processes were used by the preservice classroom teachers as they observed. At the noted points in the lesson, the researcher would stop the videotape and ask the preservice teachers to account for their observations or describe how they observed what they did. The preservice teachers were free to stop the videotape themselves and comment on different observations if the researcher did not do so. All three teachers made independent comments without being specifically questioned by the researcher. SRIs also gave the researcher a chance to ask the teachers to clarify any observations or responses that were confusing.

A modification of the constant comparative method of qualitative analysis (Glaser & Strauss, 1967; Goetz and LeCompte, 1981) was used to analyze the seven TA and the three SRI protocols. The protocols were divided into units of analysis defined by natural breaks and by conceptual consistency in the TA
verbalizations and in the interview conversations. To assure comprehensiveness, each unit was then coded into as many categories of analysis as possible. During the coding process, comparison of to-be-coded units with previously coded units allowed additional new categories to emerge from the data or allowed the data to find fit with categories already identified during the coding process. As the comparative process continued, categories were integrated as the accumulated knowledge pertaining to the concept of a category was revealed. Data were then organized into themes that described the accumulated knowledge of categorical comparison.

Results and Discussion

The results and discussion of the data are presented in two sections, as the study had a twofold purpose: to describe what preservice classroom teachers observe and what perceptual processes they employ while observing physical education lessons. The first section presents the content of the preservice classroom teachers' observations and the second section presents the perceptual processes they used in making those observations.

Observational Content

Only one content theme emerged from the data as characteristic of these preservice classroom teachers: students' movement responses. The observers focused on the movement responses of the students more than on any other facet of the lessons. In both the games and gymnastics lessons, student movement captured the attention of all seven preservice classroom teachers most often. The following statements are examples of observations whose content has been identified as students' movement responses. The movement content words are italicized:

There are very different rolls. . . . There’s backward. Lot of forwards. One jumped sideways and did a sideways roll. She’s jumping backwards and doing a backwards roll. That’s very creative.

One girl is making sharp changes in direction.

They’re not really changing speeds. They’re either going fast or slow. All the ones that I can see aren’t really changing speeds.

The focus on movement in the observations could be a reflection of the focus on development of skillful movers as the primary goal of physical education presented in the course. Although data were collected early in the semester, the preservice teachers were exposed from the beginning of the course to the philosophy and goals of elementary school physical education that were the basis of the course. They had already observed at the school on two occasions and had read about and been lectured on the movement framework (Logsdon & Barrett, 1984). The framework could have been a source for ideas about what to observe as well as for a vocabulary in which to talk about one’s observations.

The students’ movement response observations were examined at a more specific level of analysis as well. The movement framework, as a conceptualization of movement taught to the preservice teachers, was used to further examine their observations of movement. The examination revealed three noteworthy sub-themes.
Subtheme 1. The preservice teachers observed in all four aspects of the movement framework—body, space, effort, and relationships—in the two lessons. Most observations were made about the body while the fewest were made about the relationships that occur during movement, but all four aspects were clearly represented. Observing predominately in the body aspect and particularly in the activities dimension is characteristic of unskilled observers (Barrett, 1984). These preservice classroom teachers could not be said to be skillful observers of physical education lessons, as they had had limited instruction and practice in observing physical education lessons and limited course content knowledge to draw upon. The teachers reported that their university field experiences were the first time they had seen an elementary school physical education class since leaving elementary school. Thus they exhibited a pattern consistent with reports of the characteristics of unskilled observers (Allison, 1987; Barrett, 1984).

One interesting point emerged, however, when the observations for the two lessons were viewed separately. Observations were disproportionately in favor of the body aspect in gymnastics but were more evenly distributed among the four aspects in the games lesson. As already noted, the preservice classroom teachers had some knowledge about gymnastics but none had any knowledge of field hockey as a game. The teachers had never played hockey, did not know the rules, and had never seen a game played. (In the visual examples presented with the movement framework lecture, some slides and photographs depicted children with hockey equipment.) Lacking previous experience with hockey and lacking a vocabulary for the sport of hockey, the preservice teachers may have been describing what they saw in the broader context of the movement framework by using all four framework aspects in their descriptions. They were "relegated" to drawing upon the entire framework as a basis for observing instead of being restricted by limited background knowledge to observing mostly in the body aspect and in the activities dimension.

Subtheme 2. The second subtheme of note was the complexity of detail in movement noticed in the observations. The preservice classroom teachers were able to attend to a number of details in most of the students' movement response observations. For example,

The children are moving and running. They're having some success keeping the ball close to their stick. But I see some balls going in different directions away from the children. They're using both hands when using the hockey stick.

The observation included three dimensions of the movement framework: (a) activities of the body (moving and running), (b) relationships with equipment (ball close to stick, balls going in different directions away), and (c) actions of the body parts (using both hands).

The lecture on the movement framework may have given the classroom teachers a way to organize their observations. In perceptual situations, an individual has a limited amount of processing resources available. When more resources have to be used to selectively encode information by distinguishing between relevant and irrelevant visual stimuli (Sternberg, 1984), fewer processing resources are available for the stated observations. By having movement organized in a conceptual framework, the classroom teachers would be more efficient at detecting relevant stimuli in the perceptual field and would be able to allocate more cognitive resources to processing (Norman & Bobrow, 1975). The increased
processing resources could accommodate more complexity in the movement observed.

**Subtheme 3.** The last subtheme was concerned with the students' movement response observations that were focused on the children's use of general space. When the TA verbalizations were coordinated with the videotapes of the lessons, it was apparent that observations concerning use of general space were made only when the children were still. When 28 students were dribbling hockey balls or jumping and rolling from benches, boxes, and tables at the same time, the preservice classroom teachers did not report one observation about the children's spacing in the gymnasium. When the teacher stopped the activity to give instructions and feedback, the preservice teachers made comments about the children "bunching up" or "being too close together" or "spaced evenly throughout the room." With all the children moving freely at once and at their own initiation and pace, the use of general space constantly changed very quickly. The rapidly changing use of space may have been too overwhelming for the observers to notice until the movers stopped and froze in their positions. Perhaps these preservice classroom teachers were limited in observing general space use because they had allocated their increased processing resources to other details of movement that did not change as often or as rapidly and that would therefore demand fewer detection resources.

The fact that these preservice classroom teachers observed students' movement responses was surprising, yet it was encouraging in the sense that teachers of physical education need to focus their attention on movement if they are to help their students become skillful in movement. It was surprising that, in a physical education teaching environment full of complex visual stimulation, the preservice classroom teachers could maintain their predominant focus on movement, identified as an important part of physical education lessons but competing with a large number of other stimuli.

In a similar study conducted with preservice physical education teachers who were at the same point in their undergraduate teacher education program as were these classroom teachers, and whose observations were collected using the same methodology and in a similar context, Allison (1987) found that the physical education majors also observed students' movement responses more than any other lesson facet. That both groups focused primarily on students' movement responses is thought to be a reflection of the emphasis on developing skillful movers in their teacher education programs and the importance placed on the skill of observing.

One interesting difference between the two groups is that the preservice classroom teachers reported much more detail in their observations about movement than did the preservice physical education teachers. It is being suggested that the lack of experience in physical education allowed the classroom teachers to see more because they had fewer preconceived biases (Kleine & Pereira, 1970). They were not restricted by fixed notions of what or how children should or should not respond in the physical education setting. In addition, the classroom teachers reported that they used the movement framework in directing their attention to elements of the teaching/learning environment. The framework gave them a way to conceptualize movement and they were able to organize what they saw more efficiently, allowing them to focus on more detail. The preservice physical education teachers were also aware of the movement framework and had opportuni-
ties to practice using it as an observational tool in field experience lessons. However, they did not report using the framework to organize and direct their attention. Instead they reported being directed by their own background experiences and other teacher education curricular experiences. The biases they brought to the observational situation perhaps overrode the idea of using a broad conceptualization of movement to direct their attention. Without the framework as a way to organize movement, they would have been less efficient in attending to details.

Perceptual Processes

Two categories of perceptual processes of observing characterized this group of preservice classroom teachers. They used the processes of evaluation and contrast to make observations during the lessons.

Evaluation. All preservice classroom teachers evaluated what they saw in both the games and gymnastics lessons. They made judgments of right/wrong, good/bad, or successful/unsuccessful and reported these as part of their observations. As the teachers primarily observed students’ movement responses, their evaluations were almost exclusively of students’ movement.

The preservice classroom teachers stated the majority of their evaluative observations without explaining the criteria upon which the evaluations were based. Probes during the SRI did not reveal the presence of supporting bases for judgments. The absence of supporting criteria suggests that the participants judged too quickly and without an objective basis for what was seen. Indeed, when supporting criteria were provided, the criteria sometimes conflicted with the stated evaluation. In observing a student practicing backward rolls, for example, one participant said,

The little girl in front of me is doing a very good job. She’s rolling on her head. When she flips over backwards, she straightens out. She doesn’t stay in a little ball. She can’t stay in the curl position. She’s having a hard time getting over too.

Difficulty in generating enough force to roll, inability to maintain a curled body position, and failure to keep the head from supporting weight in the roll were evaluated as “a very good job.” Quick judgments and absence of objective evaluative criteria are characteristic of unskilled observers (Barrett, 1984). Skilled observers delay evaluation until they have enough objective observations to warrant making a judgment. Evaluation too soon, without objective supporting observations, could lead to incorrect interpretations and conclusions. Inaccuracy would then become the basis for the next instructional action. Teaching effectiveness cannot be sustained if the bases for the teacher’s actions are incorrect interpretations and conclusions. These preservice classroom teachers had little experience in observing and developing observational effectiveness in physical education lessons and, as could be expected, demonstrated characteristics of unskilled observers.

Contrast. Observation by contrast refers to the use of opposing features of an element in the perceptual field to direct attention. One participant was observing by contrast in the gymnastics lesson when she commented on the height of jumps from the apparatus: “Some are really getting up there and others are just kind of barely jumping.” She attended to the jumps by contrasting the opposing
extremes of height. Observing by contrast was thematically characteristic of this group of participants.

Observing by contrast may have been the preservice teachers’ attempt at defining categorical boundaries for the recently presented conceptualization of movement. Theoretical research on concept acquisition (Tennyson & Cocchiarella, 1986) proposes formulation of conceptual knowledge as the first step in the acquisition process. Many concept categories, however, are not specifically defined by a set of criterial attributes such that the presence or absence of the attributes defines the category. These categories are said to have variable or unstable boundaries. Categories of movement as represented in these field experience lessons would have had variable boundaries. As the observers’ conceptual knowledge of movement categories was not developed completely, they may have been attempting to mark out boundaries for different movement categories by exploring opposing features of movement through contrast.

Contrast as a perceptual process will most likely be employed if no other feature of the stimulus is salient to the observer (Arnheim, 1969). The preservice classroom teachers had not had enough experience observing P.E. lessons to develop a systematic visual search pattern that comes with increased experience in observing particular perceptual situations (Gibson, 1968). A systematic visual search strategy is precluded by a lack of conceptual knowledge. As the preservice teachers’ conceptual knowledge was not well formulated, they were not free to apply that knowledge in a systematic visual search for features in the environment that were critical for gathering observational information necessary for the task at hand. Their attention was directed by contrasting elements of features rather than by any systematically sought critical features of the environment that would lead to increased understanding of what was seen.

Implications for Teacher Education

One implication from the finding related to the content of preservice classroom teachers’ observations is being suggested. Teacher educators could help observers be more effective by providing a type of conceptual framework for the desired focus of attention and in examining the role bias plays in observing. A framework, presented prior to the observation, would give preservice teachers specific information about what to observe and would increase their chances of actually seeing it by determining beforehand what could be relevant versus irrelevant visual information. Examining the role of preconceived biases would alert observers to the influence that such biases have on what is seen. Awareness of these influences would help preservice teachers reduce their negative impact, for example interference with the application of a conceptual framework for observing.

There are two implications from the finding that preservice classroom teachers used the perceptual processes of evaluation and contrast to observe: (a) preservice classroom teachers need practice in making nonevaluative observations, and (b) they need direction in moving beyond defining the boundaries of movement concepts as contrasts of extremes in a particular feature of movement. Practice in making nonevaluative observations allows the preservice classroom teacher and the teacher educator to know whether the observer is seeing objectively what is presented in the visual field before passing judgment.
Evaluations made after the observations would then be based on objective observational criteria rather than on nonexistent, conflicting, or incorrect criteria.

If preservice classroom teachers observe by contrast because no other feature of the environment is salient to them, they need help in identifying the salient features of what they are observing. They also need help in seeing that a feature of movement, or any other part of a lesson, does not present itself only as extremes. All children in a class will not likely be jumping only high or low, nor will they all be running only fast or slow. Height and speed will vary between these extremes, and preservice classroom teachers need help in recognizing this.

The implications presented have been for teacher educators in teaching the pedagogical skill of observing. Teacher educators can help preservice classroom teachers become more effective observers of movement by (a) providing a type of conceptual observational framework to direct attention, (b) providing practice in making nonevaluative observations, and (c) helping them to realize there is more to movement than extremes. Merely telling preservice classroom teachers what they will be seeing, or simply just letting them see physical education lessons without telling them what and how they are to observe, diminishes the potential of the observational setting as a powerful learning environment in the development of pedagogical skills.

References


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