DOCUMENT RESUME

ED 348 355 SP 033 979

AUTHOR Byra, Mark; Coulon, Stephen C.
TITLE Preservice Teachers' Inclass Behaviors: The Effect of Planning and Not Planning.
PUB DATE Apr 92
NOTE 33p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 20-24, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Feedback; Higher Education; *Instructional Development; *Intentional Learning; Interaction Process Analysis; Intermediate Grades; Learning Strategies; *Lesson Plans; Physical Education; Preservice Teacher Education; *Student Teachers; Task Analysis; *Teacher Effectiveness
IDENTIFIERS Preservice Teachers

ABSTRACT

This study compares and contrasts the effects of planning on the instructional behaviors of a group of preservice teachers across two teaching conditions, a plan condition and a no-plan condition. Twelve preservice teachers each taught two 25-minute lessons to classes of 7 or 8 fourth-, fifth-, or sixth-grade learners. Lesson plans were developed for the first lesson (plan condition), but not the second (no-plan condition). All lessons were videotaped and subsequently employed in the data analyses. Three data collection instruments were used for the analysis of selected teaching behaviors. Results suggest that planning has a positive effect on some preservice teachers' teaching behaviors. Learners taught in planned lessons spent less time in noninstructional aspects of activity, less time waiting their turn, and less time being off-task during activity time. Teachers were more attentive to the actions of learners during pre-task presentations, and provided specific corrective feedback that was congruent to the skill focus of the lesson more frequently during post-task presentations. For teachers-in-training it seems that planning is important to the employment of effective teaching behaviors in the interactive teaching environment. (Author/LL)

Preservice Teachers' Inclass Behaviors: The Effect of Planning and Not Planning

Mark Byra, Ph.D.
School of Physical and Health Education
University of Wyoming
P.O. Box 3196
Laramie, WY 82071
(307)766-4094

Stephen C. Coulon, Ph.D.
School of Physical and Health Education
University of Wyoming

Paper presented at the annual meeting of the American Educational Research Association, San Francisco, April, 1992

Preservice Teachers' Inclass Behaviors: The Effect of Planning and Not Planning

Mark Byra, Ph.D.
School of Physical and Health Education
University of Wyoming
P.O. Box 3196
Laramie, WY 82071
(307)766-4094

Stephen C. Coulon, Ph.D.
School of Physical and Health Education
University of Wyoming

Abstract

The purpose of this study was to compare and contrast the instructional behaviors of a group of preservice teachers across two teaching conditions, a plan condition and a no-plan condition. Twelve PETE majors, seven females and five males, from the same teacher preparation program volunteered to participate in this study. The 12 preservice teachers each taught two 25-minute lessons to classes of seven or eight fourth, fifth, or sixth grade learners. Lesson plans were developed for the first lesson (plan condition), but not the second (no-plan condition). All lessons were videotaped and subsequently employed in the data analyses. Three data collection instruments were used for the analysis of selected teaching behaviors: the ALT-PE system; an instrument for coding teacher verbal feedback statements; and the QDITC system. The results suggest that planning has a positive effect on some preservice teachers' teaching behaviors. Learners taught in planned lessons spent less time in noninstructional aspects of activity, less time waiting their turn, and less time being off-task during activity time. Teachers were more attentive to the actions of their learners during pre-task presentations, presented the subject matter to the learners more clearly during task presentations, and provided specific corrective feedback that was congruent to the skill focus of the lesson more frequently during post-task presentations. For teachers-in-training it seems that planning is important to the employment of "effective" teaching behaviors in the interactive teaching environment.

Preservice Teachers' Inclass Behaviors:

The Effect of Planning and Not Planning

Fundamental to the role of a teacher is the capacity to identify and plan quality instructional programs. Over the past two decades, teachers' instructional behaviors have been studied in classroom and gymnasium settings to better understand what makes some teachers more effective than others. More recently, researchers have turned to studying teachers' planning and teaching behaviors to gain a more complete understanding of teacher effectiveness. Planning seems to play a fundamental role in linking curriculum to instruction and, in turn, influencing what goes on in the interactive teaching environment. Yinger (1979) suggests that "teacher planning is the major tool by which teachers manipulate the environment that later shape and control their own behavior" (p. 164).

Most teachers are taught to use Tyler's (1950) linear planning model for planning for instruction, however, research suggests that the majority of teachers in the field do not adhere to this prescriptive approach in planning. Research on teacher planning in the classroom setting shows that teachers are more apt to consider the context of the teaching situation and the activities that would be of interest to the learners than the objectives and process for evaluating learners in the lesson (Clark & Yinger, 1987; McCutcheon, 1980; Morine-Dershimer, 1985; Zahorik, 1975).

Most studies on planning in physical education (Goc-Karp & Zakrajsek, 1987; Housner & Griffey, 1985; Placek,1984; Sherman, 1979) support the findings from classroom research, however, the results from one study refute the findings that suggest teachers' planning behaviors and decisions center around lesson activities (Stroot and Morton, 1989). The authors found that five of the seven teachers in their study followed the Tyler planning model (Tyler, 1950).

These five teachers, all of whom had had three or more years of teaching experience, considered instructional objectives before learner activities. The other two teachers, who were both in their first year of teaching, considered learner activities before instructional objectives. The authors suggest that this finding may be attributed to "the large amount of time that a new teacher must devote to the development of content for each new unit" (p. 221). The five experienced teachers, who had already developed a large repertoire of activities, may have been able to change their planning focus from learner activities to learner objectives as a result of knowing the content.

Because learning occurs in activities, it is logical to suggest that the major task of the teacher is to gain and maintain cooperation during instructional tasks (Doyle, 1979). Jackson (1968) reports that teachers are concerned with student learning, but in order to meet learning outcomes, the students must be interested and involved in the instructional activities. Thus, learning activities rather than learning outcomes become the focus of teachers' preactive decision making.

Research in education suggests that what teachers do in the classroom is influenced by what they think prior to entering the interactive environment (Clark & Yinger, 1987; Clark & Peterson, 1986). This link between teacher planning and action has been examined in three studies. Zahorik (1970) found that teachers who were given structured lesson plans in advance of teaching used learner ideas during the lessons less frequently than teachers who were unable to plan in advance. Zahorik concluded that given lesson plans which followed the linear planning model, the teachers were less sensitive to the learners thoughts and actions. A competing explanation for this finding may be that the teachers who were unable to plan were forced by the complexity of the task to employ ideas from their students, while the teachers who were able to plan

were influenced to focus more on the lesson content than the behaviors' of the students (Clark & Peterson, 1986).

Positive correlations between teachers' focus of written planning statements and interactive teaching behavior have been revealed in two studies. Peterson, Marx, & Clark (1978) found that the proportion of teachers' planning statements centered around learner activities was positively related to two teacher behaviors, group focus and subject matter focus and Camahan (1980) found that the proportion of written planning statements directed at small groups or individual students was positively correlated with the observed use of small groups during interactive teaching. These findings suggest that teacher planning was more related to general focus of interactive teaching than to the specific details of teacher behavior.

Teachers' planning behaviors and their relationship to subsequent instructional behaviors have been examined in two studies in physical education. Imwold et al. (1984) compared the interactive teaching behaviors (CAFIAS Instrument) of 12 PETE majors who planned for a lesson with those who did not. The results showed that teachers who did not plan spent more time being silent and less time giving directions in the gymnasium than teachers who did plan. In a study of 30 preservice teachers' planning (FPMS Instrument) and teaching behaviors (ALT-PE-TB Instrument), Twardy and Yerg (1987) found planning content coverage to be positively correlated to teacher demonstration and planning activity structures to be positively related to giving directions. The results from these two studies suggest that what preservice teachers do prior to teaching effects what they do while teaching.

A significant proportion of instruction consists of teachers making decisions and judgments about what their students should learn, are learning, and have learned, and what instructional activities are appropriate. In most Physical

Education-Teacher Education programs, a considerable amount of time is devoted to the planning process without knowing much about how planning effects the instructional behaviors of teachers-in-training. If teacher educators are to continue to hold the belief that planning contributes to effective teaching, then there is a need to continue to examine the relationship between planning and instruction more completely.

Purpose of Study

The purpose of this study was to compare and contrast the instructional behaviors of a group of preservice teachers across two teaching conditions, a plan condition and a no-plan condition. The major question addressed was, "What effect does planning have on the instructional behaviors of teachers who are learning to teach?"

Method

Subjects

Twelve physical education-teacher education majors, seven females and five males, from the same teacher preparation program volunteered to participate in this study. All of the subjects (juniors) had completed a common core of professional preparation courses and one formal pre-student teaching experience prior to the study. The formal teaching experience was an eight week, twice per week, one teacher to one learner teaching experience with a three, four, or five year old child. At the time of the study, all 12 subjects were enrolled in their second formal pre-student teaching practicum. Fifty-six elementary aged children between 9 and 11 years served as learner subjects. Informed consent was obtained from the subjects to participate in the study.

Procedures

The 12 preservice teachers each taught two 25-minute lessons to groups of seven or eight fourth, fifth, or sixth grade learners. Lesson plans were developed for the first lesson taught (plan condition), but not the second (no-plan condition). In the plan condition, the preservice teachers' observed lesson was in basketball. Each subject taught this lesson from a plan that included instructional objectives, teacher objectives, a sequence of skill tasks to be taught (related to dribbling, passing, or shooting a basketball), related critical skill cues, an organizational plan of the learning environment, and an outline of how class time was to be utilized. The preservice teachers developed their lesson plans several days before teaching.

In the no-plan condition, the preservice teachers' observed lesson was in soccer. The preservice teachers were unaware of the instructional content for this lesson until two minutes before teaching. At this time, they entered the gymnasium and were given the following instructions: "Your task is to present the following soccer skill (dribbling or juggling) to a group of learners (seven or eight fourth, fifth, or sixth graders). The goal of your lesson is to increase the learners' ability to perform the skill (dribble or juggle). You have one soccer ball, one hoop, and one cone per learner. The learners will be arriving in approximately one minute." No other information was provided.

A stratified random technique was used to group learners and assign them to the preservice teachers in each condition. This techniques was used to ensure that each group contained the same number of males and females.

Basketball and soccer skills were selected as the content for the lessons for three reasons: (a) both sports are team activities, and thus have many similarities; (b) all of the preservice teachers had taught the selected skills during their first formal teaching experience, and thus entered the study with a

similar amount of subject matter knowledge and experience; and (c) both sports were scheduled in the elementary school physical education curriculum where the study was being conducted.

All of the plan and no-plan lessons were videotaped. A wireless microphone was worn by the preservice teachers to allow for accurate coding of verbal feedback. The videotapes were employed in the data analyses.

Instrumentation

Three data collection instruments were used for the analysis of the selected teaching behaviors: (a) the revised Academic Learning Time-Physical Education (ALT-PE) system (Parker, 1989); (b) an instrument for coding teacher skill-related verbal feedback statements; and (c) the task presentation portion of the Qualitative Dimensions of Lesson Introduction, Task Presentation, and Lesson Closure system (Byra, 1992), which is a modified version of Rink and Werner's QMTPS (1989). A broad selection of variables and instrumentation were employed to obtain a rich description of teaching processes in instruction.

ALT-PE Instrument.

The ALT-PE system addresses teacher behaviors that are specific to use of class time by assessing the behavior of learners. A 5-second observe, 5-second record interval recording technique was employed. The observer is required to make two observations in each interval. The first observation is based on the teaching environment (context level) and the second on learner involvement (motor engaged or not motor engaged).

Verbal Feedback Instrument.

Teacher feedback statements (skill related) were recorded using event recording. This recording technique consists of tallying the number of times a specific behavior occurs. The teacher feedback statements were coded as

general positive, negative, or corrective, or specific positive, negative, or corrective.

QDITC Instrument.

The QDITC instrument was used to collect qualitative information about teacher behaviors during task presentations. Teachers' pre-task, task, and post-task presentation behaviors are coded with this instrument. Pre-task presentation behaviors coded are teacher position, learner attention, and arrangement of task environment. Task presentation behaviors coded are clarity, demonstration, number of task cues, accuracy of task cues, and qualitative task cues, while post-task presentation behaviors coded are response appropriateness, learner organization, and teacher congruent feedback. Definitions for the pre-, task, and post-task presentation behaviors are presented in Figure 1. Interobserver reliability coefficients (simple percent agreement) ranging between .86 and 1.0 have been yielded for the QDITC behaviors (Byra, 1992). This instrument is an expanded version of Rink and Werner's QMTPS (1989).

Insert Figure 1 About Here

Pre-task, task, and post-task presentation behaviors show the teacher's ability to clearly communicate accurate qualitative motor skill information to attentive learners such that the learners can proceed to work in a focused manner on tasks. The three pre-task dimensions (teacher position, learner attention, and arrangement) are included because it is possible for a teacher to clearly communicate accurate qualitative motor skill information to learners, yet have few learners exhibit appropriate behavior in task performance. Novice teachers are so intent on getting through task presentations that they often

neglect to focus learner attention and arrange the task environment before informing the learners about the task. Capturing learner attention and arranging the task environment prior to task presentation seems critical to learner understanding and, in turn, to learner response appropriateness.

The five task presentation dimensions reflect the teacher's ability to identify and clearly communicate accurate qualitative task cues to the learners (Rink & Werner, 1989). There is some evidence to suggest that teachers who clearly communicate qualitative aspects of skill movement tend to be more effective than teachers who do not, as reflected by learner performance (Gusthart & Sprigings, 1989; Rink & Werner, 1987; Werner & Rink, 1989). In addition, the importance of demonstration and of focusing students on the critical elements of a movement has been shown in the information processing and motor development literature (Gallagher, 1984; Gentile, 1972).

Three dimensions are identified under post-task presentation. Teacher congruent feedback reflects the degree to which teacher feedback matches the task focus. The importance of externally presented information on the process of skill acquisition is well documented in the motor learning literature (Salmoni, Schmidt, & Walter, 1984). Learner response appropriateness reflects the degree to which the learners perform the task as outlined by the teacher, while learner organization reflects the degree to which the teacher maximizes learner opportunity to practice (trials) during post-task presentation. Together, learner response appropriateness and learner organization help to create a more complete picture of learner behavior during activity. Academic learning time research in physical education shows moderate to strong correlations between some construct of students' functional time and student learning (Metzler, 1983; Phillips & Carlisle, 1983; Yerg, 1981).

When coding the teachers' task presentation behaviors, the videotape was stopped after the teacher's presentation of the task, at which time the pre-task and task behaviors were coded, and at the end of the time allocated for task performance, at which time the post-task behaviors were coded. The pre-, task, and post-task presentation behaviors were coded according to degree of presence or absence (see Figure 1).

Data Analysis

Frequencies for the ALT-PE categories were tabulated and then converted to percentage figures for each observation by dividing the frequency by the total number of observed intervals. Frequencies for the feedback categories were tabulated and then converted to rate per minute scores for each observation by dividing the frequency by the total number of minutes in the observed lesson. These conversions were necessary because lesson length for the 24 lessons ranged between 22 and 26 minutes. Rate per minute is a more appropriate unit of measure when length of observation across sessions is variable (van der Mars, 1989).

Frequencies for the QDITC pre-task, task, and post-task behavior categories were tabulated and percentage scores computed for the plan and no-plan conditions by dividing the frequency of most desired scores (scores of one) by the frequency of all scores combined (one, two, and three scores). The unit of analysis employed was condition because the number of task presentations in each observation varied. As few as two task presentations were coded in some observations and as many as seven in others.

Inferential statistics were computed to further interpret the data obtained from the ALT-PE system and verbal feedback instrument. Percentage time engaged in the ALT-PE categories and rate per minute scores for the feedback

categories were analyzed in separate univariate one-way ANOVAs repeated measures. A .05 level of significance was used in all analyses.

Interobserver Agreement

Four of the plan and no-plan videotapes were selected at random and reanalyzed by an independent observer to determine interobserver agreement. The scored interval and unscored interval methods were used to estimate the reliability of the ALT-PE data (Hawkins & Dotson, 1975). Percent means of 83 and 86 were observed. Using simple percentage of agreement, interobserver agreement scores for the feedback categories ranged from 80% to 100%, with a mean of 88%, and for the QDITC categories 86% to 100%, with a mean of 92%.

Results and Discussion

ALT-PE

Descriptive statistics for the ALT-PE categories are presented in Table 1. Included are the mean, standard deviation, and range scores for each category in the plan and no-plan conditions. The analysis of the data obtained for the plan and no-plan conditions revealed close similarities within the general content, subject matter knowledge, and subject matter motor content categories of the context level. In the plan lessons, learners spent 31.7% of their time in general content or nonphysical education content, while in the no-plan lessons, learners spent 24.7% of their time in non-physical-education content. Learners in both conditions devoted similar amounts of time to transition, management, and break. However, learners were observed in warm-up for more time during the plan lessons (8.1%) than the no-plan lessons (3.3%). The amount of time the preservice teachers devoted to nonphysical education content in this study is comparable to the amount of time a group of student teachers devoted to nonphysical education content (Randall & Imwold, 1989) and the amount of

time elementary physical education specialists devoted to nonphysical education content (Placek & Randall, 1986).

Insert Table 1 About Here

The researchers had anticipated that the learners would spend more time in management and transition in the no-plan lessons than in the plan. However, this difference failed to materialize. One possible explanation for this finding may be that the preservice teachers employed the same sets of organized actions (routines) for addressing managerial activities in the class in the no-plan lessons as in the plan lessons. This seems quite probable because the focus of both lessons was similar, to improve learner acquisition of a specific sport skill.

The amount of time devoted to subject matter knowledge content in the plan lessons was 26.5% and in the no-plan lessons 25.3%. The majority of time used in this subcategory was devoted to the presentation of skill technique. Scores of 18.8% and 23.7% were observed in the plan and no-plan lessons, respectively. These scores are considerably higher than the scores yielded from studies of student teachers (Randall & Imwold, 1989) and experienced physical education educators (Placek & Randall, 1986). It seems that subject matter content knowledge acquired through experience may have a more powerful effect on teachers' interactive behaviors than planning in itself. A substantial difference was revealed for the amount of time the teachers spent testing the learners' knowledge about skill technique. In the plan lessons, learners devoted 5.6% of their time to testing, while in the no-plan lessons learners devoted 0.3% of their time to testing.

The amount of time learners were observed involved in motor activity (subject matter motor) was 41.8% in the plan lessons and 49.9% in the no-plan lessons. Almost all of their time was spent in skill practice in the plan (39.5%) and no-plan (47.9%) lessons. This result is not surprising given that the intent in both the plan and no-plan lessons was to increase the learners' ability to perform a specific sport skill.

The time devoted to subject matter content in the plan (68.3%) and no-plan lessons (75.2%) falls within the range of findings reported in other ALT-PE studies in elementary schools. Scores as high as 85.0% (Placek, Silverman, Shute, Dodds, & Rife, 1982) and 79.0% (Shute, Dodds, Placek, Rife, & Silverman, 1982), and as low as 69.2% (Placek & Randall, 1986) and 65.7% (Godbout, Brunelle, & Tousignant, 1983) have been reported for subject matter content.

Comparisons of how time was spent by the learners at the learner involvement level revealed differences within the subcategory not motor engaged and similarities within the subcategory motor engaged. Although learners were observed not motor engaged in subject matter-oriented activities for approximately the same amount of time, 72.3% in the plan and 70.3% in the no-plan lessons, how they spent their time not motor engaged differed. Differences were revealed for percent of total intervals spent in the categories of interim, off-task, and cognitive. Learners spent 3.7% and 7.9% of their time in noninstructional aspects of ongoing activities (interim) and 3.6% and 6.1% in inappropriate activities (off-task) in the plan and no-plan lessons, respectively. In contrast, percent of total intervals learners spent engaged in cognitive tasks was 32.1% for the plan lessons and 25.3% for the no-plan lessons. Assuming that being cognitively engaged in subject matter-oriented motor activity is

valued, then it seems that the learners spent time categorized as not motor engaged more effectively in the plan lessons than in the no-plan lessons.

Amount of time devoted to learner motor engaged behavior was 27.7% for the plan lessons and 29.7% for the no-plan lessons. Learners were observed engaged in activity with a high degree of success (motor appropriate) 18.9% of the time in the plan lessons and 18.2% of the time in the no-plan lessons, engaged in activity that was either too easy of too difficult to perform (motor inappropriate) 6.4% of the time in the plan lessons and 9.5% of the time in the no-plan lessons, and engaged as a helper in activity (supporting) 2.3% of the time in the plan lessons and 2.0% of the time in the no-plan lessons. The only difference revealed was for motor inappropriate activity time, and this difference was marginal.

Inferential analysis was conducted to determine the significance of the differences in the descriptive data. Within the context level, significant differences were revealed for general content-warm-up and subject matter knowledge content-rules. Learners in the plan lessons spent more time engaged in warm-up activity, $F(1,11)=7.07$, $p<.02$, and written work associated with motor skill development, $F(1,11)=11.08$,$p<.01$, than learners in the no-plan lessons. The difference in warm-up time can be attributed to warm-ups not being included in three of the no-plan lessons. Spending time in cognitive activity in the plan lessons seems to suggest that the preservice teachers were attempting to hold their learners accountable for the understanding of the subject matter presented.

Within the learner involvement level, significant differences were revealed for interm, off-task, and cognitive behaviors. Learners in the plan lessons spent less time in noninstructional aspects of the ongoing activities, $F(1,11)=6.72$,$p<.02$, and were observed off-task less frequently,

F(1,11)=6.33,p<.03, than learners in the no-plan lessons. It seems that in the plan lessons the learners had less opportunity to spend time unnecessarily retrieving equipment and deviating from the given task. This may be attributed to the preservice teachers having organized learners in a more effective manner for task executio in the plan lessons. In contrast, the learners were observed spending more time in cognitive tasks in the plan lessons than in the no-plan lessons. According to this finding, one might infer that the preservice teachers were attempting to hold their learners more accountable for the understanding of the subject matter in the plan lessons than in the no-plan lessons.

Verbal Feedback

A report of the mean, standard deviation, and range scores for the verbal feedback categories are contained in Table 2. The descriptive analysis of the data obtained for the two conditions revealed similarities within the general feedback categories and differences within the specific feedback categories. Rates per minute for general feedback were 1.30 and 1.24 in the plan and no-plan lessons, respectively. The majority of this came in the form of positive feedback, with rates of 1.22 for the plan lessons and 1.16 for the no-plan lessons. Per minute rates of .09 (plan) and .10 (no-plan) were revealed for general corrective feedback. No general negative feedback was provided by the preservice teachers. The result regarding general feedback is consistent with findings from Imwold et al. (1984), who reported that similar amounts of praise and encouragement (equivalent to general positive feedback) were provided by the teachers in the plan and no-plan conditions.

Unlike general feedback, specific feedback was given more frequently in the plan lessons than the no-plan lessons. Specific positive feedback was provided at a rate of .21 in the plan lessons and .14 in the no-plan lessons,

while specific corrective feedback were provided at a rate of .50 in the plan lessons and .16 in the no-plan lessons. No specific negative feedback was provided by the preservice teachers.

Insert Table 2 About Here

On average, the preservice teachers provided 1.30 general and .71 specific feedbacks per minute in the plan lessons and 1.24 general and .31 specific feedbacks per minute in the no-plan lessons. Specific to general feedback ratios of .56 (plan lessons) and .25 (no-plan lessons) were calculated. To every one specific feedback, the preservice teachers provided two general feedbacks in the plan lessons and four in the no-plan lessons.

Inferential analysis was conducted to determine the significance of the differences in the feedback data. Significant differences were revealed for specific corrective feedback and the specific to general feedback ratio. Rate per minute for specific corrective feedback was higher in the plan lessons than in the no-plan lessons, $F(1,11)=26.63$, $p<.01$, as was the specific to general feedback ratio, $F(1,11)=10.36$, $p<.05$. These differences may be explained by the preservice teachers' requirement to list critical skill cues in the lesson plans. Before a teacher can provide a learner with any kind of skill feedback, skill performance must be observed and the quality of performance assessed. If established criteria for performance are unknown, as may have been the case in the no-plan lessons, it would be difficult for a teacher to offer specific feedback to learners. It seems likely that having to list critical skill cues in the plan condition helped the preservice teachers to focus in on the specific elements of the skill being presented which, in turn affected their verbal interactions with the learners.

QDITC

QDITC task presentation category profiles of the most desirable scores for the plan and no-plan lessons are displayed in Table 3. Percent responses most desired were found to be higher in the plan lessons than in the no-plan lessons for all categories. The largest differences were detected in the following categories for the plan and no-plan lessons, respectively: (a) learner attention, 97.1% compared to 65.5%; (b) demonstration, 53.6% compared to 38.5%; (c) accuracy of cues provided, 81.8% compared to 38.9%; (d) provision of qualitative cues, 95.2% compared to 50.0%; and (e) congruent feedback, 77.1% as compared to 38.6%. Upon closer inspection, the demonstration data revealed that the preservice teachers failed to provide any kind of demonstration in 50.0% of their task presentations in the no-plan lessons. In contrast, demonstrations were absent in only 17.8% of the preservice teachers' task presentations in the plan lessons.

Insert Table 3 About Here

Total task presentation scores (percent responses most desired) of 86.1% and 64.5% were found for the plan and no-plan lessons, respectively. These scores are likely most indicative of the differences between task presentations in the two conditions because they represent task presentations from a more holistic view point.

The QDITC data seem to suggest a relationship between task and post-task presentation behaviors. When the preservice teachers presented demonstrations and provided qualitative skill cues during task presentations, they were likely to offer specific congruent feedback during post-task presentations. In the plan lessons, the preservice teachers presented partial or

complete demonstrations and provided qualitative skill cues in more than 80% of their task presentations and specific congruent feedback in more than 75% of their post-task presentations. In contrast, in the no-plan lessons the preservice teachers presented partial or complete demonstrations and provided qualitative skill cues in less than 50% of their task presentations and specific congruent feedback in less than 40% of their post-task presentations. Presenting the learners with the model for skill performance in combination with specific skill cue information seemed to influence the preservice teachers' ability to offer specific congruent feedback during activity time. This is an important finding in light of Werner and Rink's (1989) description of effective instructional characteristics, where it was reported that greater performance gains were recorded by learners when teachers offered specific feedback that matched the cues given the learner as a focus.

Although similar amounts of time were devoted to transmitting information to learners regarding skill technique (ALT-PE subject matter knowledge-technique) in the plan and no-plan lessons, information gleaned from the QDITC instrument about the presentation of demonstrations and provision of qualitative skill cues suggests that planning seemed to have a positive effect on the quality of the preservice teachers' task presentations. This example shows how qualitative data can aid in explaining quantitative findings about instructional processes.

Summary and Conclusions

Within the design limitations of this study, which include a small number of subjects, single lessons taught within each condition, and the teaching of the plan lessons before the no-plan lessons, the results suggest that planning has a positive effect on some preservice teachers' teaching behaviors. Learners

taught in planned lessons spent less time in noninstructional aspects of activity, less time waiting their turn, and less time being off-task during activity time. Teachers were more attentive to the actions of their learners during pre-task presentations, presented the subject matter to the learners more clearly during task presentations, and provided specific corrective feedback that was congruent to the skill focus of the lesson more frequently during post-task presentations. For teachers-in-training it seems that planning is essential to the employment of "effective" teaching behaviors in the interactive teaching environment.

In light of these findings, it seems important that prospective teachers be given ample opportunity to plan, implement, and evaluate instruction on a regular basis beginning early in their preservice training. In addition, it seems critical that components of planning and teaching, because of their existing link, be introduced and developed (taught and practiced) in combination.

Given the limited data base, there is a need for continued research to further examine the effect planning has on the instructional behaviors of teachers who are learning to teach. This study raises as many questions as it answers. Questions that need to be addressed in future research include: (a) What aspects of lesson planning contribute to effective teaching?; (b) Does lesson planning affect the interactive teaching behaviors' of experienced teachers differently than inexperienced teachers?; (c) How does planning relate to quality of learner achievement?; and (d) Are the interactive teaching behaviors for teachers who center their lesson plans around learner tasks different than for teachers whocenter their lesson plans around learner objectives?

References

Byra, M. (1992). Measuring qualitative aspects of teaching in physical education. Journal of Physical Education, Recreation, and Dance, 63(3), 83-89.

Carnahan, R. (1980). The effects of teacher planning on classroom processes (Tech. Rep. No. 541). Madison: Wisconsin R & D Center for Individualized Schooling.

Clark, C., & Peterson, P. (1986). Teachers' thought processes. In M.C. Wittrock (Ed.), Handbook of research on teaching (pp.255-296). New York: Macmillan.

Clark, C., & Yinger, R. (1987). Teacher planning. In J. Calderhead (Ed.), Exploring Teachers' Thinking (pp. 84-103). London: McKay of Chatham.

Doyle, W. (1979). Making managerial decisions in classrooms. In D.L. Duke (Ed.), Classroom management (Seventy-eighth Yearbook of the National Society for the Study of Education, Vol. 2). Chicago: University of Chicago Press.

Gallagher, J. (1984). Making sense of motor development: Interfacing research with lesson planning. In J. Thomas (Ed.), Motor development during childhood and adolescence. Minneapolis, MN: Burgess.

Gentile, A. (1972). A working model for skill acquisition with application to teaching. Quest, 27, 3-23.

Goc-Karp, G., & Zakrajsek, D. (1987). Planning for learning--Theory into practice? Journal of Teaching in Physical Education, 6(4) 377-392.

Godbout, P., Brunelle, J., & Tousignant, M. (1983). Academic learning time in elementary and secondary physical education classes. Research Quarterly for Exercise and Sport, 54(1), 11-19.

Gusthart, L., & Sprigings, E. (1989). Student learning as a measure of teacher effectiveness in physical education. Journal of Teaching in Physical Education, 8(4), 298-311.

Hawkins, R., & Dotson, V. (1975). Reliability scores that delude: An Alice-in-wonderland trip through the misleading characteristics of interobserver agreement scores in interval recording. In E. Raup & G. Semb (Eds.), Behavior analysis: Areas of research and application (pp. 359-376). Englewood Cliffs, NJ: Prentice-Hall.

Housner, L., & Griffey, D. (1985). Teacher cognition: Differences in planning and interactive decision-making between experienced and inexperienced teachers. Research Quarterly for Exercise and Sport, 56(1), 45-53.

Imwold, C., Rider, R., Twardy, B., Oliver, P., Griffin, M., & Arsenault, D. (1984). The effect of planning on the teaching behavior of preservice physical education teachers. Journal of Teaching in Physical Education, 4(1), 50-56.

Jackson, P. (1968). Life in classrooms. New York: Holt, Reinhart & Winston.

McCutcheon, G. (1980). How do elementary school teachers plan? The nature of planning and influences on it. Elementary School Journal 81, 4-23.

Metzler, M. (1983). Using academic learning time in process-product studies with experimental teaching units. In T. Templin & J. Olson (Eds.), Teaching in physical education (pp. 185-196). Champaign, IL: Human Kinetics.

Morine-Dershimer, G. (1985). Talking, listening, and learning in elementary classrooms. New York: Longman.

Parker, M. (1989). Academic learning time-physical education (ALT-PE), 1982 revision. In P. Darst, D. Zakrajsek, & V. Mancini (Eds.), Analyzing physical education and sport instruction (pp. 195-206). Champaign, IL: Human Kinetics.

Peterson, P., Marx, R., & Clark, C. (1978). Teacher planning, teacher behavior, and student achievement. American Educational Research Journal, 15(3), 417-432.

Phillips, D., & Carlisle, C. (1983). A comparison of physical education teachers categorized as most and least effective. Journal of Teaching in Physical Education, 2(3), 55-67.

Placek, J. (1984). A multi-case study of teacher planning in physical education. Journal of Teaching in Physical Education, 4(1), 39-49.

Placek, J., & Randall, L. (1986). Comparison of academic learning time in physical education: Students of specialists and nonspecialists. Journal of Teaching in Physical Education, 5(3), 157-165.

Placek, J., Silverman, S., Shute, S., Dodds, P., & Rife, F. (1982). Academic learning time (ALT-PE) in a traditional elementary physical education setting. Journal of Classroom Interaction, 17(2), 41-47.

Randall, L., & Imwold, C. (1989). The effect of an intervention on academic learning time provided by preservice physical education teachers. Journal of Teaching in Physical Education, 8(4), 271-279.

Rink, J., & Werner, P. (1989). Qualitative measures of teaching performance scale (QMTPS). In P. Darst, D. Zakrajsek, & V. Mancini (Eds.), Analyzing physical education and sport instruction (pp. 269-275). Champaign, IL: Human Kinetics.

Salmoni, A., Schmidt, R., & Walter, C. (1984). Knowledge of results and motor learning: A review and critical reappraisal. Psychological Bulletin, 95(3), 355-386.

Sherman, M.A. (1979). Teacher planning: A study of expert and novice gymnastics teachers. Paper presented at the annual Pennsylvania State Conference for Health, Physical Education, and Recreation, Philadelphia, PA.

Shute, S., Dodds, P., Placek, J., Rife, F., & Silverman, S. (1982). Academic learning time in elementary school movement education: A descriptive analytic study. Journal of Teaching in Physical Education, 1(2), 2-14.

Stroot, S., & Morton, P. (1989). Blueprints for learning. Journal of Teaching in Physical Education, 8(3), 213-222.

Twardy, B., & Yerg, B. (1987). The impact of planning on inclass interactive behaviors of preservice teachers. Journal of Teaching in Physical Education, 6(2), 136-148.

Tyler, R. (1950). Basic principles of curriculum and instruction. Chicago: University of Chicago Press.

van der Mars, H. (1989). Basic recording tactics. In P. Darst, D. Zakrajsek, & V. Mancini (Eds.), Analyzing physical education and sport instruction (pp. 19-52). Champaign, IL: Human Kinetics.

Werner, P., & Rink, J. (1989). Case studies of teacher effectiveness in second grade physical education. Journal of Teaching in Physical Education, 8(4), 280-297.

Yerg, B. (1981).The impact of selected presage and process behaviors on the refinement of a motor skill. Journal of Teaching in Physical Education, 1(1), 38-46.

Yinger, R. (1979). Routines in teacher planning. Theory into Practice, 18(3), 163-169.

Zahorik, J. (1970). The effects of planning on teaching. Elementary School Journal, 71(3), 143-151.

Zahorik, J. (1975). Teachers' planning models. Educational Leadership, 33(2), 134-139.

Figure Caption

Figure 1. Category definitions for QDITC observation instrument.

TASK PRESENTATION

A. **Pre-Task** presentation concerns the arrangement of the environment, positioning of the teacher, and attention of the learners prior to any instructions and/or directions given. Three categories are described.

1. **Teacher Position**: Degree to which the teacher can see all of the learners.
   - All: Teacher can make eye contact with all learners without turning head more than 180 degrees.
   - Partial: Teacher can make eye contact with more than 50% but not all of the learners without turning head more than 180 degrees.
   - Few: Teacher can make eye contact with fewer than 50% of the learners without having to turn more than 180 degrees.

2. **Learner Attention**: Degree to which all of the learners are attending to the teacher.
   - All: All of the learners are quiet and looking in the direction of the teacher.
   - Partial: More than 50% but not all of the learners are quiet and looking in the direction of the teacher.
   - Few: Less than 50% of the learners are quiet and looking in the direction of the teacher.

3. **Environment Arrangement**: Degree to which the environment/equipment is prepared.
   - Yes: Environment/equipment is arranged for immediate use.
   - Partial: More than 50% but not all of the environment/equipment is arranged for immediate use.
   - No: Less than 50% of the environment/equipment is arranged for immediate use.

B. Task presentation concerns the delivery of information to the learners.

4. **Clarity**: Whether the teacher communicates clear explanation/directions to the learner about what to do and how to do it, judgement to be confirmed by learner response appropriateness (Rink & Werner, 1989).
   - Present: Learner engages in the task as prescribed by the teacher immediately following the task presentation.
   - Absent: Learner does not engage in the task as prescribed by the teacher immediately following the task presentation.

5. **Demonstration**: Degree to which the teacher (or surrogate performer) presents a model of the task (Rink & Werner, 1989).
   - Present: Task is modelled in full at least once.
   - Partial: Only a part of the task is modelled.
   - Absent: Task is not modelled.

6. **Appropriate Number of Cues**: Degree to which the teacher provides to the learner an adequate amount of information about the task (Rink & Werner, 1989).
   - Yes: Teacher provides one to three task related cues.
   - Partial: Teacher provides more than three task related cues.
   - No: Teacher provides no task related cues.

7. **Accuracy of Cues**: Degree to which the presented cues are technically correct (Rink & Werner, 1989).
   - Yes: Cues given are correct.
   - Partial: One or more incidents of incorrect information given.
   - No: No cues given.

8. **Qualitative Cues Provided:** Whether the teacher provided to the learner information about the skill process or technique of the movement (Rink & Werner, 1989).
   Yes: Teacher provides one to three technical aspects of the movement task.
   No: Teacher provides no information about the technical aspects of the task.

C. **Post-Task** presentation concerns learner response and teacher verbal behavior after task presentation. Four categories are described.

9. **Learner Response Appropriateness:** Degree to which the learners perform the task as outlined by the teacher (Rink & Werner, 1989).
   All: No more than two learners showing inappropriate responses.
   Partial: More than three learners showing inappropriate responses.
   None: All learners showing inappropriate responses.

10. **Learner Organization:** Degree to which learners are active during activity time.
   All: All learners are active or assisting others in learning or performing practice trials.
   Partial: More than 50% but not all of the learners are active or assisting others in learning or performing practice trials.
   Few: Less than 50% of the learners are active or assisting others in learning or performing practice trials.

11. **Teacher Specific Congruent Feedback:** Degree to which teacher feedback matches the task focus (Rink & Werner, 1989).
   Present: Teacher feedback matched the task focus more than three times.
   Partial: Teacher feedback matched the task focus once or twice.
   Absent: Teacher feedback did not match the task focus.

Table 1

Comparison of Percent of Observed Intervals Spend in ALT-PE Categories

	Plan (n=12)			No Plan (n=12)		
Categories	%	SD	Range	%	SD	Range
Context Level						
General Content	31.7	9.8	38.6	24.7	5.4	17.5
Transition	18.9	5.2	17.3	16.7	5.2	15.8
Management	5.1	3.2	10.6	4.7	3.1	9.2
Break	0.3	1.0	3.5	0.0	0.0	0.0
Warm-up	8.1	4.3	14.2	3.3	2.7	8.3
Subject Matter Knowledge	26.5	6.0	20.1	25.3	7.8	24.6
Technique	18.8	7.4	27.9	23.7	7.4	23.0
Strategy	0.0	0.0	0.0	0.6	0.2	0.7
Rules	5.6	5.5	19.6	0.3	0.6	1.6
Social Behavior	2.1	2.1	5.7	1.3	1.1	3.8
Background	0.0	0.0	0.0	0.6	0.2	0.7
Subject Matter Motor	41.8	11.3	37.2	49.9	10.4	28.3
Skill Practice	39.5	11.3	35.5	47.9	13.6	43.0
Scrimmage	0.0	0.0	0.0	0.0	0.0	0.0
Game	2.0	7.0	24.4	2.0	7.1	24.6
Fitness	0.3	0.9	3.3	0.0	0.0	0.0
Learner Involvement Level						
Not Motor Engaged	72.3	7.6	27.3	70.3	6.5	22.9
Interim	3.7	4.0	12.6	7.9	3.4	10.1
Waiting	12.0	5.1	19.6	13.9	7.9	24.5
Off-task	3.6	1.6	6.3	6.1	4.6	15.8
On-task	20.9	6.6	25.9	17.0	5.4	17.3
Cognitive	32.1	6.4	18.4	25.3	8.7	23.8
Motor Engaged	27.7	7.6	23.8	29.7	6.5	22.9
Motor Appropriate	18.9	7.7	21.6	18.2	6.8	24.1
Motor Inappropriate	6.4	3.8	11.8	9.5	5.0	16.8
Supporting	2.3	4.0	13.5	2.0	5.3	18.3

Table 2

Mean Rates per Minute, Standard Deviations, and Ranges for Teacher Feedback

	Plan (n=12)			No-Plan (n=12)		
Categories	M	SD	Range	M	SD	Range
General	1.30	.39	1.04	1.24	.29	1.10
Positive	1.22	.40	1.16	1.16	.28	1.20
Corrective	0.09	.09	0.26	0.10	.09	0.30
Specific	0.72	.36	1.31	0.31	.34	1.30
Positive	0.21	.19	0.91	0.14	.26	0.90
Corrective	0.50	.25	0.39	0.16	.16	0.40
Specific/General Ratio	0.56	.24	0.97	0.25	.25	0.93

Note: General negative and specific negative verbal feedback statements were not given during the lessons.

Table 3

Percent Responses Most Desired for Qualitative Dimensions of Pre-task,Task, and Post-task Presentations

Construct	Plan (n=12)	No-Plan (n=12)	Difference
Pre-task Presentation			
Teacher position	100	93.1	6.9
Learner attention	97.1	65.5	31.6
Environment arranged	100	93.1	6.9
Task Presentation			
Clarity	94.3	86.2	8.1
Demonstration			
Present	53.6	38.5	15.1
Partial	28.6	11.5	17.1
Absent	17.8	50	32.2
Number of cues	68.2	50	18.2
Accuracy of cues	81.8	38.9	42.9
Qualitative cues	95.2	50	45.2
Post-Task Presentation			
Response appropriateness	88.6	79.3	9.3
Learner organization	91.4	77.6	13.8
Congruent feedback	77.1	38.6	38.5
Total Score	86.1	64.5	21.6