by Alberto CRUZ and Chung LI

Abstract

This study aimed at examining the instructional practice of Hong Kong primary physical education student teachers. Twenty student teachers were videotaped teaching two lessons during their practicum. They were coded using the Physical Education Teacher Assessment Instrument. Data generated were comprehensively described. Three randomly selected student teachers participated in the second phase of the study. They were observed teaching two lessons and attended two pre-lesson and post-lesson interviews. Results indicated that the student teachers spent 73.18% of their time in instructional behaviours and 26.82% of their time in managerial behaviours. They held common features in instructional practice during teaching.

The major task of the teacher education institute is to produce competent teachers. Teacher education institute usually offers campus training programmes and student teaching experiences for their students to acquire the basic pedagogical principles and reflective skills in learning to teach. Throughout the teacher education process, student teachers are aimed to be prepared to teach competently and effectively before they graduate.

Recently, Whipple and Ammah (2001) have suggested that managerial and instructional competencies are the two major teaching effectiveness criteria for physical education beginning teachers. In practice, managerial strategies are the prerequisite procedures that teachers adopt to create an environment where instruction and learning can take place, while instructional strategies refer to actions that promote student learning. Rink (1996) also added that effective teachers can create a total learning environment for their students. From a synthesis of these research findings, Schempp (1992) pointed out that effective teaching is related to student achievement and effective teacher is ultimately defined by what students learn. In short, effective physical education teaching is highly related to proper managerial strategies, a positive learning environment, good instructional strategies and student achievements.

Teaching practice and student teaching have long been recognized as the most important elements within the teacher education programme that help student teachers learning to teach (Coulon, 1991; Paese, 1984a; Siedentop, 1981; Tannehill & Zakrajsek, 1988). Student teaching has provided opportunities for student teachers to work in real school situations. With these opportunities, student teachers can critically examine whether theories learned in the coursework fit into the actual teaching environment. They are also expected to develop their basic teaching skills during these experiences. However, student teachers may not capture expected pedagogical skills within student teaching experience. Research evidence stresses the problems for developing pedagogical skills in student teachers (Paese, 1984b; Rikard, 1990; Stones, 1983). Some student teachers gained little benefit and negligible change in the development of their pedagogical skills.

From the experience of the authors who work as physical education teacher educators in a Hong Kong institute of education, they find that some primary physical education student teachers also have teaching problems during their practicum. These student teachers cannot manage the class and deliver the teaching content properly in relation to the student learning objectives stated in the lessons. How they are prepared in the coursework before the practicum seems to have little effect on their instructional practice. This aroused the authors’ interest to study the instructional practice of the student teachers as to understand what is happening during their practicum.

Understanding more about the practice of student teachers will help the teacher educators to improve their students’ teaching effectiveness. Besides, it also holds implications for the planning of the institute teacher education programme. Are the student teachers well prepared for their practicum? However, there have been limited studies investigating the teaching of primary physical education student teachers in Hong Kong. Therefore, the purpose of the study was to examine the instructional practice of Hong Kong primary physical education student teachers during their practicum. It is hoped that data generated in the study would give a better picture of the practice of student teachers and, in turn, assist the teacher educators to help them during their practicum. In addition, these also help the teacher educators to review their physical education teacher education programme in preparing the student teachers for the practicum. The information generated will add to the physical education student teacher’s effectiveness research during their practicum. This has shed light on the process of student teacher development and on the quality of the instructional practice in physical education.

Methods

Subjects

The participants were students seeking teacher certification in primary physical education at a Hong Kong institution of education. They were engaged in the final year of a two-year full time programme and had limited teaching experience, having only six weeks of teaching practice experience in general subjects in the first year. They age ranged from 22 to 24 (mean = 22.45) and had no teaching experience in physical education.

Procedures

During their methods classes in physical education, as the subject lecturer, the first author briefly introduced the outline of the proposed study. Twenty primary physical education student teachers were randomly selected and invited to participate in the study. They were asked to videotape their teaching of two ball games lessons in their assigned schools during the last three weeks of their final practicum. This ensured that they have attended the
methodology and didactic courses as well as gained full advantage of the student teaching experience in real school settings. The activities taught in the lessons were limited to team ball games activities. These include football, basketball and volleyball activities. It was hypothesized that this kind of arrangement would minimize possible variation of their instructional practice in the lessons. The participants were also assured that all data collected would be confidential and in no way affect their grade assessment for the student teaching performance. To insure protection and to gain the trust of the participants, confidentiality and anonymity were guaranteed concerning the collection of data and the report of the study. Pseudonyms were used throughout the study to protect the participants’ identities.

Each videotaped lesson was coded using the Physical Education Teacher Assessment Instrument (PETAI) (Phillips, Carlisle, Steffen, & Stroot, 1986). The PETAI allows for a continuous temporal recording of two categories of teaching behaviours, the instructional and the managerial, which meets the purpose of the study. There are five teacher instructional behaviours categories and five teacher managerial behaviours categories within the PETAI (see Table 1). Forty lessons were videotaped and taught to pupils from primary three to primary six. Quantitative data generated by the PETAI were comprehensively analyzed. Three student teachers were randomly selected and consented to take part in the second phase of the study by allowing the first author to observe their videotaped lessons, conduct two pre-lesson in-depth interviews, as well as engage them in two stimulated recall sessions. One male and two female student teachers participated in the second stage and they are named as Kei, Sze and Ling in the later part of this paper.

Qualitative data were collected through lesson observations and interviews. These helped to provide information about the effects of participants’ perception, thinking and knowledge on teaching ball games activities, as these underlying factors may influence the student teachers’ teaching. Data generated supplement and give a better picture of the teaching process of the participants. All coding of the videotapes was done by two research assistants. In order to establish the reliability of the quantitative data, both intra- and inter-observer agreement measures were made by using the methods suggested by Van der Mars (1989). Intra- and inter-observer reliability ranging from 94.1 % to 100% and 83.4% to 100% were respectively recorded. Both surpassed the accepted limit 80% suggested by Van der Mars.

Data Analysis

Data generated by the PETAI coding procedure entered into a SPSS programme for statistical analysis. Descriptive statistics including the mean and standard deviation were calculated for all behaviour category of the observation instrument. These descriptive data allowed comparing with the results of other studies in this area.

Qualitative data for this study consisted of interview tapes, stimulated recall records and field notes of the observed lesson. The analysis of data was based upon the methods of inductive analysis and constant comparison and coding procedures (Glaser & Strauss, 1967; Strauss & Corbin, 1990). Initially, all interviews, stimulated recall sessions and field notes of lesson observation were fully transcribed. Through inspection and careful reading of the data, interesting or surprising themes were identified within data. This allowed categories to emerge from the data which were separated according to each theme. Lastly, the investigator searched for the dominant trends and patterns within the study. The resulting data, developed from the inductive process, included the summaries of what was said and observed. Participants’ direct quotations were used to provide data validity. A number of strategies were utilized to establish the trustworthiness of results: triangulation, peer debriefing, and member checks. Findings from interviews, stimulated recall sessions, and lesson observations were compared and contrasted to cross-check data and interpretations. Consistent findings from different sources coupled with good explanations for differences in data from divergent sources enhanced the overall credibility of the study results. In addition, the second author was asked to read and comment on the preliminary analyses and data interpretation. Meetings were held and discussed until both authors came to an agreement. Finally, all the interviews and stimulated recall record transcripts were returned to the participants and they were asked to correct errors or inaccuracies in the transcripts. Only minor changes were made before the data analysis.

Results

Both quantitative and qualitative data generated reflect the instructional practice of the student teachers in the practicum. The systematic observation instrument employed helped the authors understand what the student teachers were doing in their physical education lessons. The mean percentages and standard deviations of time spent in different instructional and managerial behaviours of the PETAI by the 20 student teachers across 40 lessons are shown in Table 2. Results indicated that the student teachers spent 73.18% of their time in instructional behaviours and 26.82% of their time in managerial behaviours. Monitoring behaviours received the highest percentages with 38.29% whilst motivational feedback had the lowest percentage with 0.23% within the instructional behaviours categories. The student teachers spent the most time on activities organization with 13.04%, whilst the least time on beginning and ending class with 0.25% within the managerial behaviours categories.

With help from the analysis of the field notes data, we have a better understanding of how the student teachers teach their lessons. In regard to the instructional and managerial behavioural aspects and teaching strategies, several major categories emerged from the analysis.

Teaching Behaviours

1. Teaching Style. The student teachers adopted a teacher-directed approach in teaching. The student teachers dominated and initiated most classroom activities. They did most of the talking within the lessons. In this sense, the student teachers adopted the command and practice styles of teaching (Mosston & Ashworth, 2002). They made all the decisions and directed the lessons. It seemed that the student teachers deliberately controlled the classroom activities by adopting this teaching style. However, this direct teaching style requires specific teaching skills to help student learning. These include clear presentation, efficient use of time in learning, good class management and providing feedback.
These teaching characteristics match with those behaviours with relative high percentage time spent exhibited by student teachers in Table two. The following episodes reflected the direct teaching style of the student teachers:

Ling (student teacher) instructed the students to spread out for the stretching exercise…Ling demonstrated the dig technique with two hands in front of the class…she instructed them to follow and practice her introduced skills. (Ling field notes 1)

Kei (student teacher) then demonstrated the dribbling technique and dribbled the ball to the other end of the group. Students started the practice immediately after the demonstration. After 1 minute, Kei stopped the class and emphasized the teaching points of the dribbling and ball receiving techniques. He allocated 20 seconds for the students to practice. (Kei field notes 2)

2. Collective Behaviours. The student teachers shared teaching behavioural characteristics in the classroom. These included informing, demonstrating, organizing, observing, providing feedback, or correcting. All these teaching behaviours indeed fell within the behavioural category of the PETAI. They are the “planned presentation”, “response presentation”, “organization”, “monitoring” and giving “performance feedback”. This explains why these instructional behaviours demonstrate relatively high percentage of time spent in the lessons. The actual content of these teaching behaviours appeared to be similar but the proportion of time spent in each category might differ. This collective behaviour may be attributed to the similar routine activities they provided in the lessons. Their lesson activities usually consisted of a warm up, skill instruction and practice, game application and a closing activity. These highly routinized activities made the student teachers produce similar teaching behavioural characteristics. The following excerpts taken from the field notes support this sub-category:

Ling (student teacher) used a whistle to stop the class and asked the students to sit down in front of her (directing)...She ordered the students to sit in 4’s (organizing)...Ling demonstrated the next task with three students (demonstrating). She explained the requirements and teaching points in detail (informing)...Ling gave feedback and tried to correct their underhand dig technique (providing feedback and correcting). (Ling field notes 2)

Sze (student teacher) asked the boys to practice serving in the open area (directing)...She then instructed one student to demonstrate the serve and the other students tried to receive the serve at the other end of the playground (demonstrating)...She went to the open area and observed the serving performance of the boys (observing). After providing feedback, she also walked around and monitored the practice of the students (monitoring). (Sze field notes 2)

3. Presentation. Providing information about learning activities to the students is one of the essential functions of teaching. Rink (1994) defines this process of providing the information about learning activities to students as task presentation. How the teachers present the learning tasks influences the learning of students. The student teachers in the present study used much time to explain the content of the lesson and in some occasions did not even model the learning tasks for the students.

She [Ling] (student teacher) spent quite a lot of time in the introduction of the dig technique. In terms of time spent, she talked a little bit more. (Ling field notes 2)

After minutes of practice, Sze (student teacher) stopped the students practice and asked them to watch the demonstration…She did not perform the technique herself…She again did not demonstrate the technique for the class. She only gave verbal instruction and mentioned the teaching points. (Sze field notes 1)

4. Organization. Efficient organization of learning activities will maximize the learning time of the students. Since a certain amount of management, organization and transition time is necessary in teaching, it is critical for teachers to keep these times to the lowest possible amount as to maintain optimal amounts of time in those segments that lead directly to learning. The student teachers spent a relatively long time period in organizational detail both prior to and during activity. They seemed to have problems in handling equipment and apparatus.

She [Ling] distributed the volleyball…She took some time for the organization and demonstration. (Ling field notes 2)

…three fourths of the class were standing at the back waiting and watching the practice. It seemed that the organization was not good enough. There were too many students waiting for the practice. (Kei field notes 2)

5. Supporting. Giving support to students while they are practicing will facilitate their learning. However, the student teachers were rather passive in monitoring the student practice. They usually stood still and observed with little time supervising student performance. As indicated in Table two, the student teachers spent more than one third of class time monitoring the class. It is likely that the student teachers need to play a more active role in supporting student learning in the classroom. The following episodes reflected the supporting behaviours of the student teachers during the physical education lessons.

Ling (student teacher) stood still and monitored the students’ practice. She did not give feedback nor assist the under-performing students. (Ling field notes 1)

Three to four girls always stood around and rarely kicked the ball and seldom took part in the activity. Kei (student teacher) only walked and watched how the students participated in the dribbling relays. (Kei field notes 1)

6. Pedagogical Setting for Learning. Physical education teachers always try to maximize the learning opportunities for their students in their lessons. Due to the nature of the ball games teaching, the availability of space and balls are the major considerations of student teachers. Partner and small group practice were the common settings. The student teachers offered station teaching settings for the final game learning activities. Two to three different modified games or related skill practice were usually set up concurrently for their students to apply their learned ball skills. The following vignettes depict typical activities settings used by student teachers in their classes:

…the setting was to practice in pairs using the underhand dig technique…She ordered the students to sit in 4’s…The students were required to dig in a square setting and direction…Ling (student teacher) asked half of the class to practice in single line digging practice and other half practiced the [2 vs 2] modified games. (Ling field notes 2)
Kei (student teacher) asked students to sit down in groups of 4...he then spread out the groups to practice...Kei tried to refine the technique by requesting students to run to the opposite side and line up behind the receiver after the pass [in the same setting]...Kei asked two groups to practice the previously learnt activity, inside foot passing. He assigned two groups to play the 'monkey' game... (Kei field notes 1)

**Instructional Strategies**

To increase student learning, physical education teachers always try to develop high levels of student engagement with the content. Engagement with the content is a necessary condition for learning and it is also a minimum criterion for effective teaching (Rink, 2002). To achieve high levels of student engagement in the learning activities, teachers usually adopt a variety of teaching strategies to ensure the students are able to function within the lesson.

In reality, the teacher will use different strategies for different purposes and in different contexts. A teacher rarely stays with one single strategy in a single lesson. It is expected that the student teachers will adopt a variety of teaching strategies in their teaching. From the analysis of the interviews and field notes, several categories emerged with respect to the managerial and instructional strategies employed:

1. **Preventive Management.** Effective physical education teachers usually introduce certain managerial strategies to prevent or reduce instances of managerial problems in complex physical education settings. Their main purposes are to minimize the likelihood of behavioural problems in class in order to increase time on task and student learning. The student teachers in the present study seemed to recognize the importance of preventing management problems occurring in class. Most student teachers said that they would establish rules and routines for their classes. They claimed that they would present the class rules and their expectations at the first lesson. They trusted that reinforcing routines would help to minimize the opportunity for student misbehaviours. The following quotes from the pre-lesson interviews are examples of the management strategy that student teachers used to prevent classroom discipline problems:

   ...To let the students know my [Sze] requirements in the first lesson. Otherwise I will punish them if necessary. (Sze Pre-Lesson Interview 1)

   ...To state out my requirements and expectations clearly. I [Kei] also set rules for the students to follow. (Kei Pre-Lesson Interview 1)

2. **Equipment Management.** Instructional time can be lost when the teacher is spending much time in arranging equipment during the lesson. Improper equipment arrangement increases management time and loses lesson momentum as students wait for the next activity to be organized (Siedentop & Tannehill, 2000). Field notes data indicated that the student teachers had assigned pupils to assist with equipment dispersal and return. This reduces management time considerably and keeps students involved in the flow of the lesson. The following episodes were the examples:

   She [Ling] requested the students to bring the basket of volleyballs out from the equipment room...She also asked one student to bring out ropes and play the 2 vs 2 modified games. (Ling field notes 2)

   Kei (student teacher) asked some students to bring the cones from the equipment room for the setting up of the next activities...He asked the students to put away the cones and line up in the covered playground. (Kei field notes 2)

3. **Task Presentation.** Teachers must provide information about the learning task before students can begin to pursue the task. Physical education teachers usually use different types of strategies for presenting tasks to students. Whatever strategy they use, they aim at providing the clearest task presentation information in the shortest amount of time that facilitates students’ learning. Interview data indicated that the student teachers preferred using a more directed type of presentation method, tell and show strategy. By verbal explanation and demonstrations, I [Kei] will also give them some instructions for what to do. (Kei Pre-Lesson Interview 1)

   ...Mainly by demonstration and explanation. (Ling Pre-Lesson Interview 1)

4. **Learning Tasks.** Appropriate learning tasks designed and chosen for student engagement are essential to student learning. Rink (2006) pointed out that learning games sports skills is different from learning other individual motor skills. As games skills are open skills and they are needed to be applied in the game itself. Teachers should adopt an appropriate teaching strategy to help students capture the ability to use sport skills in a game situation. Macfadyen and Osborne (2000) suggested that contextualized games activities of 2v1, 2v2, 3v2, and 4v4 are relevant for upper primary students to develop their games skills. The tasks selected should match students’ abilities so as to give them a sense of competence. Some of the tasks selected by the student teachers in the lessons were inappropriate for games skills learning. The difficulties of their tasks did not match the students’ abilities and some did not follow a logical progression extension. Some games chosen did not even relate to the selected games skills.

   The students were required to dig in a square setting and direction...The task might be too difficult for the students. Most students could not practice as instructed. The practice was inappropriate to the student abilities. (Ling field notes 2)

   Almost half of the class could not receive the serve. In fact, Sze (student teacher) did not prepare any progressive tasks for the learning of serve technique as well as receiving the serve with the dig...The boys were playing the piggy game with two defenders. The game was originated and usually used in the basketball teaching activity. The skills required in the game did not relate to the learning of volleyball. (Sze field notes 2)

**Discussion / Conclusions**

This study sought to explore the instructional practice of primary physical education student teachers in ball games lessons. Physical educators have realized that proper allocation of time spent in instructional and managerial behaviours will help student learning in physical education lessons. Curtner-Smith (1994) suggested that teachers who spent a relatively large proportion of lesson time in instruction and relatively less time in class management were more successful in terms of enhancing students’ skill learning. This was also advocated by Byra and Coulou (1994) and Silverman (1991), teachers could spend a minimum of time in
managerial behaviours would help students to have more time in skill practicing and learning.

When comparing student teachers’ behaviours with other research using PETA1 to investigate teacher practices (Aicinena, Steffen, & Curtner-Smith, 1992; Curtner-Smith, Kerr & Hencken, 1995; Laco & Curnter-Smith, 1998; Laker, 1994; Smith, Kerr, & Wang, 1993), the percentages of time spent in both instructional and managerial behaviours by the local student teachers was very similar to the patterns of the instructional practice of the American physical education teachers and British physical education student teachers. They allocated about three quarters of their lesson time to instructional behaviours and one fourth of the lesson time to managerial behaviours. Moreover, the local student teachers spent relative less time in presenting their teaching materials. The normal primary physical education lesson time in Hong Kong ranges from 30 to 35 minutes. The short lesson time restricts the teachers having detailed instructional behaviours and precise presentation is always emphasized in the lesson by the institute supervisors due to this environmental constraint. However, the qualitative data indicated that the student teachers still have room to improve and shorten their presentation time.

On the other hand, the student teachers allocated relatively more time in response presentation and reasonable time in performance feedback. This implied that they kept repeating and reminding the teaching points as well as providing information with response to the skill performance of the students, which was always stressed by the institute supervisors. However, it was discouraging to know that the student teachers did not give more motivational feedback to their students. Motivational feedback is helpful to encourage student learning. The possible explanation may be due to their inadequate teaching experience as they are at the novice stage of teacher development according to the Berliner (1988). At this stage, the teachers were inflexible and labeled every task they had learnt from their teacher training. It is possible that the student teachers in the present study only concentrated on contents presentation and neglected the learning of the individual student. In fact, Ha (1996) also obtained similar feedback patterns when she examined the instructional practice of 40 Hong Kong physical education teachers. The teachers provided low rates of praise and corrective to positive feedback when teaching. It seems that Hong Kong physical education profession needs to take note of this teaching characteristic.

Teachers usually spend some time observing student learning in class. Physical educators defined this kind of instructional behaviours as monitoring (Phillips, Carlisle, Steffen & Stroot, 1986). Boggess, Griffey and Housner (1986) demonstrated that monitoring was a key tool used by physical education teachers in order to maintain class order. It is assumed that the teachers are cognitively functioning to help the pupils while silently observing the learning environment. Recently Aicinena (2000) confirmed that the cognitive behaviours during this observing period were mostly concerned with the student behaviour and performance when he studied a physical education student teacher’s thoughts during monitoring in twenty two classes. However, Hastie (1994) showed that the less effective teachers spent more time observing. In the present study, the local sample on average spent 38.29% of lesson time in monitoring. Most monitoring occurred during game play or the practice of skills. As institute supervisors always encourage student teachers to allocate considerable time for skill application, the student teachers usually reserve over one third of the period time for game play or conditioned games. It is reasonable to find that the local student teachers had allocated almost 40 % of the lesson time to monitoring during games teaching. In addition, the qualitative data also indicated that the student teachers were rather passive in their monitoring practice. They could have made use of this time actively supporting their students in learning.

Physical educators agreed that effective teachers spent less time managing and more time instructing (Harrison, 1987; Phillips & Carlisle, 1983; Siedentop, Herkowitz, & Rink, 1984). Research results also indicated that primary school physical education teachers were ineffective in terms of time management and spent a large percentage of management time in class (Quarterman, 1977; Stewart, 1980). They found that primary physical educators on average allocated 37% of the lesson time to management and some teachers even spent 52% of the lesson time to management in their studies. In the present study, student teachers shared as low a percentage class management time as 26.82%. It seemed that they were managing the classes very well in terms of time spent. However, the field notes data indicated that the student teachers might still have difficulties in organizing activities and handling equipment when teaching.

The findings of the study held several implications for the preparation of the physical education teachers. The quantitative data revealed that student teachers did not give much motivational feedback, while the qualitative data confirmed that they exhibited less supporting behaviours to students. This has implications for the practice in physical education teacher education. Moreover, there is still room for the student teachers to improve their classroom management time. It seems that the student teachers lack of pedagogical skill related to the classroom management. Development of these teaching abilities should be emphasized within the teacher education programme in future. Field notes data also revealed that the student teachers had problems in choosing appropriate learning tasks and skill-applied games in games lessons. The development of competent of student teachers in games teaching and planning should receive much attention in physical education teacher education programmes. Moreover, the investigators in the present study have no intention to favour the adoption of the apprenticeship style “training” of the student teachers and neglect the “education” of the student teachers. Instead, both approaches should receive equal attention during the preparation of student teachers. They understand the improvement of classroom practicum experience will help to master a repertoire of teaching skills but it does not guarantee the student teachers will be able to make proper judgment about what ought to be done in a particular situation. Nevertheless, teacher educators should take note of this and make better planning of the field experience programme. Providing more opportunities for student teachers in practicing teaching or lengthening the practicum period might help the teaching competent of student teachers. With an increase of reflecting opportunities and reflection process during and even prior to the practicum experience, the student teacher may construct their knowledge of teaching.

In terms of limitations, participants of the study came from one
teacher education institute. Data from this sample may have biased the findings. Readers should interpret the results with caution. Studies that expand the sample populations and teacher education institutions to replicate findings are recommended.

As teaching is a complex dynamic activity occurring in a complex environment (Doyle, 1986; Shulman, 1987), combining quantitative and qualitative data together could give a better account of the instructional practice of the student teachers. The findings from these data did provide some information on the practices of student teachers in primary physical education and helped us understand how student teachers teach ball games activities. However, there is still a need for the teacher educators to understand why the student teachers adopted such instructional practice during their practicum period. Besides, the findings also imply that the teacher educators in the present study need to rethink their design of their teacher education programme. Are the student teachers well prepared for the practicum? Therefore, it is advised to conduct more research on this issue and help the teacher educators understand more about their students and how their programmes influence the practice of their students.

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References


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Table 1. Definitions of the Teacher Instructional and Managerial Behaviours Categories Coded by the Physical Education Teacher Assessment Instrument.

Table 2. Percentages of Teacher Behaviour Time for the Student Teachers across Forty Lessons.