An Examination of Instructional Behaviors of Collegiate Athletic Coaches in Athletic Practice and Physical Skill Class Settings

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Introduction

In colleges and universities, coaches are expected to teach although coaching and teaching are viewed as different professions in our society (Bergmann-Drew, 2000; McElroy, 2002). Successful fulfillments of each particular role hinges on the ability of an individual to narrow the gap between the role of a coach and teacher by identifying the similarities of the dual roles (Bergmann-Drew, 2000, McElroy, 2002; Millard, 1996). Bergmann-Drew (2000) and McElroy (2002) pointed out that both sport and physical education programs would benefit if a coach viewed the dual roles by the similarities and not the differences. Systematic observation of teachers and coaches has been utilized to successfully analyze behavior patterns, such as informing, structuring, questioning, feedback, and hustling exhibited by the teachers/coaches. Systematic observations also allow the comparison of the differences and similarities regarding instructional behaviors as individual perform in dual roles as a PE teacher and an athletic coach (Faucette & Patterson, 1990; Graber, 2001; Lacy & Darst, 1989; Millard, 1996). Instruments of systematic observation have been widely used because the instruments have well-defined performance categories and coding procedures (e.g., Cheffers’ Adaptation of the Flanders’ Interaction Analysis System, CAFIAS, Cheffers & Mancini, 1989; Academic Learning Time-Physical Education [ALT-PE], 1982 Revision, Parker, 1989; Computerized System for Observing Fitness Instruction Time [CSOFIT] instruments, Keating, Kulinda, & Silverman, 1999; & Direct Instruction Behavior Analysis [DIBA], Zakrjasek & Tannehill, 1989).

Several systematic observational instruments have also been developed for observing and analyzing coaching behaviors in athletic settings, such as the Coaching Behavior Assessment System (CBAS; Smith, Smoll, & Hunt, 1977); the Arizona State University Observation Instrument (ASUOI; Lacy & Darst, 1984, 1989); and the Coaching Analysis Instrument (CAI; Franks, Johnson & Sinclair, 1988). Previous studies in athletic coaching such as baseball (Rupert & Buschner, 1989), football (Lacy & Darst, 1985; Segrave & Ciancio, 1990), tennis (Claxton, 1988), and volleyball (Lacy & martin, 1994) indicated that the more effective coaching behaviors are those instructional behaviors of correcting, praising, questioning, providing specific feedback and specific verbal instructions.

Over the past few decades, with the systematic observation technique, both physical education teaching and athletic coaching have been studied, majority of the studies, however, were either focus on teaching or coaching. Although that were the important parts of teaching effectiveness in physical education theory in the book of “Developing Teaching Skills in Physical Education (Siedentop & Tannehill, 2000), the comparisons of behaviors between the two roles of teaching and coaching have not been extensively examined. To the knowledge of the investigators, only a limited number of studies have been conducted to compare the teaching and coaching behaviors of physical educators across both settings (e.g., Agnew, 1978; Bain, 1978; Kasson, 1974; & Mason, 1978). Therefore, the purpose of the present study was to examine the instructional behaviors of collegiate physical educators in their dual roles as teachers and coaches using the systematic observation technique.

Methods

Participants

The participants in this study were nine collegiate physical educators who were head coaches of 10 athletics teams (five men’s teams: basketball, volleyball, soccer, track and field, and gymnastics, and three women’s teams: volleyball, cross country, and gymnastics; the men’s and women’s swimming teams were coached by the same coach). The coaches selected also taught the same sport for the PE skill classes at an NCAA Division III private college in the United States. Each participant had at least five years of teaching and coaching experiences in his or her current position. The Institutional Review Board approved the present study; and all participants in this study provided the informed consent forms before the investigation started.
To collect data that would serve to address the purpose of the current study, a systematic observation instrument, the Arizona State University Observation Instrument (ASUOI, Lacy & Darst, 1989), was employed. Five behavioral categories comprise of the ASUOI system, which was further categorized into 14 subcategories in the original ASUOI (Lacy & Darst, 1984), that is: Instructional category (comprise of five subcategories); Comment category (comprise of three subcategories), Modeling category (comprise of two subcategories), Management category, and the other category (comprise of three subcategories).

In the present study, the following 11 subcategories were employed: Preinstruction, including initial information given to player(s) preceding the desired action to be executed; Concurrent instruction, including offering cues or reminders during the actual execution of the skill or play; Postinstruction including offering corrections, re-explanations, or instructional feedback given after the execution of the skill or play; Questioning, including any questions to student(s)/athlete(s) concerning techniques, assignments, or strategies; Positive Modeling, including any demonstration of correct performance of a skill/technique; Negative Modeling including any demonstration of incorrect performance of a skill/technique; Hustle, including verbal statements and nonverbal signs intended to intensify the efforts of the student(s)/player(s); Praise, including verbal or nonverbal compliments, statements, or signs of acceptance; Scold, including verbal or nonverbal behaviors of displeasure; Management, including verbal statements related to organizational details of class/practice sessions not referring to strategies or fundamentals of physical skill; Uncodeable, including any behaviors that did not fit into the above subcategories or could not be seen in the tape. For instance, a coach/teacher was checking athlete's/student's injury, talking with spectators, joking with athletes, or being absent from practice/class setting.

Validity and reliability of the ASUOI

With regard to the validity of the ASUOI, Lacy and Darst (1984) described that the definitions of the coaching/teaching behavioral categories had face and content validity; and because the behaviors in the ASUOI were very specific and had narrow definitions, face validity was also assumed. Lacy and Darst (1984) further indicated that content validity in the ASUOI was confirmed through literature review in the fields of athletic coaching and physical education teaching. Additionally, Lacy and Darst (1989) presented the face and content validity evidence as follows:

Because the ASUOI categories are specifically defined and obviously related to coaching behaviors, face validity is apparent. Because a rational basis exists for the selection of the behavior categories and these behaviors are representative of coaching behavior as supported by previous research, the instrument also possesses content validity. (p. 370)

It was important to emphasize that selecting observable coaching behavior categories that were supported by previous research was an important component in the validity process (Lacy & Darst, 1989). The ASUOI (Lacy & Darst, 1984) was originally designed to determine the behaviors of coaches in an athletic environment; however, the instrument could also be used to determine teacher’s behaviors in PE skill classes. For example, Rupert and Buschner (1989) used the ASUOI (Lacy & Darst, 1984) to compare the teaching behaviors for high school PE teachers in different teaching settings.

Training of judges

Two judges were selected and trained to code the 11 teaching/coaching behaviors. Prior to performing the actual videotape coding the judges completed three 90-min practice sections in pre-coding training so that they became familiarized with the coding process using the ASUOI (Lacy & Darst, 1989). Additionally, the two judges needed to reach .80 or above for the inter-observer agreement (IOA) after completion of the pre-coding training.

Procedure

The informed consent forms and the cover letters were delivered to the participants. The investigators explained the design and procedures of the study to the participants. Each participant was videotaped four times (two in teaching and two in coaching during the investigation. The quality of the videotaping was enhanced by a wireless microphone system. Fifteen minutes prior to the start of the lesson or practice sessions, the equipment was set up and each participant was secured with a microphone around his or her neck. The researcher controlled the camcorder during the videotaping that was positioned to focus on the activities the participant was teaching/coaching. All 11 behavioral subcategories were recorded as occurrence frequency and the measurement unit of rate per minute (RPM) was used. The RPM values were
computed based on the number of minutes taped per session. Percentage data were calculated by dividing the frequencies of each behavioral subcategory by 11 (i.e. the total number of the behavioral subcategory). The RPM value for each behavioral subcategory was calculated by dividing the total number of each behavioral subcategory by the total minutes of observation.

Statistics Analyses

The RPM values of the 11 dependent variables were analyzed using a 2 x 2 (teaching and coaching x Day 1 and Day 2) factorial multivariate analysis of variance (MANOVA) with two repeated measures factors. The aim of this analysis was to examine the differences and similarities among the vectors for the following 11 selected dependent variables: Preinstruction, Concurrent Instruction, Postinstruction, Questioning, Positive Modeling, Negative Modeling, Hustle, Praise, Scold, Management, and Uncodeable. Because there are no significant Day 1/Day 2 effects was found, the scores of Days 1/Day 2 were averaged and a one-way MANOVA was applied. After a significant difference revealed in the role effect (teacher/coach), the discriminant function analysis (DFA) was utilized as the multiple comparison method to determine which subcategory is the key factor in regard to the differences between the role of teaching and coaching.

Results

The current study was conducted to examine the differences and similarities of instructional behaviors of collegiate physical educators in their dual roles as teachers and coaches. Two judges were involved in the recording/coding process. The interobserver agreement (IOA) values over the 11 behavioral variables for the two different settings were: .95 in teaching (range from .87 to .96) and .93 in coaching (range from .85 to .97). Hence, the IOA values were satisfied the criterion (Mars, 1989; Siedentop, 1991) of 80.0% for the systematic observational research.

The percentage data revealed that among the 11 behavioral variables, the following six variables were used by the physical educators in a quite different way: Preinstruction, 19.8% vs. 16.6%, teaching (T) > coaching (C); Postinstruction, 19.8% vs. 22.7%, T < C; Positive Modeling, 8.5% vs. 1.3%, T > C; Hustle, 1.4% vs. 5.1%, T < C; Management, 10.2% vs. 3.8%, T > C; and Uncodeable, 4.4% vs. 11.9%, T < C. The following five behavioral subcategories were exhibited by the physical educators in a quite similar way: Concurrent-instruction, 17.0% (T) vs. 17.3% (C); Questioning, 8.0% (T) vs. 7.6% (C); Negative Modeling, 0.0% (T) vs. 0.0% (C); Praise, 9.5% (T) vs. 10.5% (C); and Scold, 2.2% (T) vs. 2.6% (C). The frequency, mean scores, and percentages of 11 behaviors for participants in two different instructional settings and observation occasions can be found in Table 1.

Table 1. Total Number, Mean Scores, and Percents of 11 Behaviors for Participants in Two Different Pedagogical Settings and Observation Occasions (N = 9)

<table>
<thead>
<tr>
<th>S&amp;D</th>
<th>PREI</th>
<th>CONI</th>
<th>POSI</th>
<th>QUES</th>
<th>POM</th>
<th>NEM</th>
<th>HUS.</th>
<th>PRA.</th>
<th>COL</th>
<th>MANA</th>
<th>UNCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD1</td>
<td>729</td>
<td>591</td>
<td>529</td>
<td>321</td>
<td>253</td>
<td>15</td>
<td>34</td>
<td>294</td>
<td>62</td>
<td>323</td>
<td>132</td>
</tr>
<tr>
<td>TD2</td>
<td>471</td>
<td>431</td>
<td>589</td>
<td>164</td>
<td>261</td>
<td>16</td>
<td>51</td>
<td>282</td>
<td>70</td>
<td>296</td>
<td>136</td>
</tr>
<tr>
<td>MTS</td>
<td>600</td>
<td>511</td>
<td>559</td>
<td>243</td>
<td>257</td>
<td>16</td>
<td>43</td>
<td>288</td>
<td>66</td>
<td>310</td>
<td>134</td>
</tr>
<tr>
<td>TP%</td>
<td>19.8</td>
<td>16.9</td>
<td>19.8</td>
<td>8.0</td>
<td>8.5</td>
<td>.0</td>
<td>1.4</td>
<td>9.5</td>
<td>2.2</td>
<td>10.2</td>
<td>4.4</td>
</tr>
<tr>
<td>CD1</td>
<td>693</td>
<td>750</td>
<td>880</td>
<td>335</td>
<td>56</td>
<td>3</td>
<td>225</td>
<td>503</td>
<td>121</td>
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<td>538</td>
</tr>
<tr>
<td>CD2</td>
<td>733</td>
<td>737</td>
<td>1064</td>
<td>322</td>
<td>62</td>
<td>3</td>
<td>213</td>
<td>403</td>
<td>107</td>
<td>147</td>
<td>487</td>
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<tr>
<td>MCS</td>
<td>713</td>
<td>744</td>
<td>972</td>
<td>328</td>
<td>59</td>
<td>3</td>
<td>219</td>
<td>453</td>
<td>114</td>
<td>164</td>
<td>513</td>
</tr>
<tr>
<td>CP%</td>
<td>16.6</td>
<td>17.3</td>
<td>22.7</td>
<td>7.6</td>
<td>1.3</td>
<td>.0</td>
<td>5.1</td>
<td>10.5</td>
<td>2.6</td>
<td>3.8</td>
<td>11.9</td>
</tr>
</tbody>
</table>

Note. (1) S&D = Settings and Days; TD1 = Teaching Day 1; TD2 = Teaching Day 2; CD1 = Coaching Day 1; and CD2 = Coaching Day 2. (2) MTS = Mean score of teaching setting, MCS = Mean score of coaching setting, T% = Teaching Percentage, and CP% = Coaching Percentage. (3) PREI = Preinstruction; CONI = Concurrent Instruction; POSI = Post instruction; QUES = Questioning; POM = Positive Modeling; NEM = Negative Modeling; HUS. = Hustle; PRA. = Praise; SCOL = Scold; MANA = Management; and UNCO = Uncodeable.

Descriptive statistics of 11 instructional behaviors exhibited by the participants in rate per minute (RPM) are presented in Table 2. These statistics indicated the there were many similarities and differences between teaching and coaching in terms of using the instructional behaviors from the ASUOI (Lacy & Darst, 1989). For example, the participants exhibited very close amount behaviors on Postinstruction, with 1.17 in teaching (T), 1.26 in coaching (C); Concurrent instruction, with 1.04 in T, .99 in C; Questioning, with .44 in T, .41 in C; Praise, with .64 in T, .68 in C; and Scold; with .13 in T, .12 in
C in both teaching and coaching settings. Examples for the differences are: Positive modeling, .49 vs. .06 (T > C); Hustle, .09 vs. .30 (T < C); Management, .70 vs. .19 (T > C); and Preinstruction, 1.30 vs. .94 (T > C).

Table 2. Descriptive Statistics of 11 Pedagogical Behaviors from ASUOI in Rate Per Minute (RPM) for Physical Educators on Two Different Settings and Observation Occasions (N = 9)

<table>
<thead>
<tr>
<th>Behav.</th>
<th>Teaching Setting</th>
<th>Coaching Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
</tr>
<tr>
<td>PREI</td>
<td>1.30</td>
<td>.65</td>
</tr>
<tr>
<td>CONI</td>
<td>1.04</td>
<td>.63</td>
</tr>
<tr>
<td>POSI</td>
<td>1.17</td>
<td>.57</td>
</tr>
<tr>
<td>QUES</td>
<td>.44</td>
<td>.25</td>
</tr>
<tr>
<td>POM</td>
<td>.49</td>
<td>.45</td>
</tr>
<tr>
<td>NEM</td>
<td>.03</td>
<td>.04</td>
</tr>
<tr>
<td>HUS</td>
<td>.09</td>
<td>.13</td>
</tr>
<tr>
<td>PRA</td>
<td>.64</td>
<td>.38</td>
</tr>
<tr>
<td>SCOL</td>
<td>.13</td>
<td>.12</td>
</tr>
<tr>
<td>MANA</td>
<td>.70</td>
<td>.29</td>
</tr>
<tr>
<td>UNCO</td>
<td>.29</td>
<td>.29</td>
</tr>
</tbody>
</table>

Note. \(M\) = mean; \(SD\) = standard deviation; PREI = Preinstruction; CONI = Concurrent instruction; POSI = Post instruction; QUES = Questioning; POM = Positive Modeling; NEM = Negative Modeling; HUS = Hustle; PRA = Praise; SCOL = Scold; MANA = Management; and UNCO = Uncodeable.

A 2 (teaching and coaching) x 2 (Day 1 and Day 2) MANOVA with two repeated measures factors was utilized to examine the differences of the RPM among the 11 dependent variables. Because there were no independent group variables, the Levene test was not needed to identify homogeneity of variance across independent groups, the Box M test was not needed, and the Mauchly test was also not needed because there were only two levels to the repeated measures variables. No significant (\(p > .05\)) difference was found for the teaching/coaching roles of the participants, \(\eta^2 = .154, F = .678\); no significant (\(p > .05\)) difference was found for two observational occasions, \(\eta^2 = .017, F = 7.426\). The interaction (Settings x Occasions) was not significant (\(p > .05\)), \(\eta^2 = .216, F = .454\). Then, a one-way MANOVA was utilized to analyze the RPM data and a significant (\(p < .05\)) difference was found on the teaching/coaching roles: \(\eta^2 = .000, F = 3931.484\). A discriminant function analysis (DFA), then, was computed to identify which behavioral variables are more important for distinguishing the differences between the two roles of the 11 instructional behaviors. The Role function was found significant (\(\eta^2 = .138, P < .05\)). One-way MANOVA comparing instructional behaviors in RPM of teaching/coaching averaged the scores of two observation occasions can be found in Table 3. As the result, Positive Modeling and Management behaviors were significantly (\(p < .05\)) higher in the teaching setting; and the Hustle behaviors were significantly (\(p < .05\)) higher in the coaching setting.

Table 3. One-way MANOVA Comparing Instructional Behaviors in Rate Per Minute (RPM) of Teaching/Coaching Averaged the Scores of Two Observation Occasions (N = 9)

<table>
<thead>
<tr>
<th>Source</th>
<th>Wilks’ Lambda</th>
<th>(F)</th>
<th>Hypo (df)</th>
<th>Error (df)</th>
<th>(p)</th>
<th>(\eta^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T / C</td>
<td>.000</td>
<td>1763.526</td>
<td>8.000</td>
<td>1.000</td>
<td>&lt;.05</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note. T/C = Teaching/Coaching
Table 4. Discriminant Function Analysis to Determine Which Variables is More Important in the 11 Behaviors from the ASUOI for the Participants in Dual Roles of Teacher and Coach (N = 9)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>.544</td>
<td>.000</td>
<td>3.830</td>
<td>1.160</td>
<td>.530</td>
</tr>
<tr>
<td>Positive Modeling</td>
<td>.257</td>
<td>.000</td>
<td>1.863</td>
<td>.845</td>
<td>.306</td>
</tr>
<tr>
<td>Hustle</td>
<td>.198</td>
<td>.000</td>
<td>-1.927</td>
<td>-.661</td>
<td>-.192</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td>-2.885</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These finding reflected that among the 11 behavioral variables from the ASUOI (Lacy & Darst, 1989), the Positive Modeling, Management, and Hustle three variables have more power for distinguishing the differences between the roles of teaching or coaching for the physical educators. Secondly, the findings also implied that the physical educators in the current study utilized the Concurrent Instruction, Postinstruction, Negative Modeling, Praise, and Scold behavioral variables with similar frequencies in their teaching or coaching settings. A bar chart summarized the participants utilized the 11 instructional behaviors in two different instructional settings (Figure 1).

Figure 1. Bar chart for comparing the scores in 11 behaviors in percentage data for the participants in their dual roles of teacher and coach.

Note. PREI = Preinstruction; CONI = Concurrent instruction; POSI = Post instruction; QUES = Questioning; POM = Positive Modeling; NEM = Negative Modeling; HUS = Hustle; PRA = Praise; SCOL = Scold; MANA = Management; and UNCO = Uncodeable.

Discussion

The findings from the RPM data for the participants were consistent with those of the percentage data in regard to the 11 instructional behaviors using the ASUOI. The discriminant function analysis (DFA) revealed that among the 11 instructional behaviors, Positive Modeling and Management behaviors have more important meaning in teaching settings, while Hustle behaviors play more vital function in coaching settings. Concurrent Instruction, Questioning, Negative Modeling, Praise, and Scold behaviors were used with similar frequencies in both teaching and coaching settings.

The current discussion would like to focus on the major factors and reasons that causing the physical educators behaved differently in the two instructional settings. First, the reasons for Hustle behaviors to be utilized more frequently in the athletic setting might be attributed to the following factors: Coaches might have a common concern of winning and losing which directly related to the performance of the athletes. Therefore, once a coach perceived that an athlete did not perform up to expectation, hustle comments would be offered. Because coaches usually had limited practice time between competitions, coaches might attempt to motivate players through the use of hustle comments in order to enhance the effect of practice; and athletic practices tended to challenge beyond the limit of a human body; therefore, athletes might be hustled under stressful conditions.

More positive modeling and management behaviors were evident in the teaching settings. Reasons for this finding might be: Usually, students in PE skill classes might not be familiar with the skills or techniques they were learning, and they might be new to the skills or techniques. In order to develop a proper concept and form of the skills, the PE teachers had to demonstrate and illustrate the skills or techniques in different ways. Secondly, students are not familiar with the class routines and the practice formats, therefore, the PE teachers had to utilize management behaviors to organize all activities or practices in an effective manner. Frequently, the PE teachers had to demonstrate and interpret the skill components repeatedly in order to establish a new skill or remodel an old skill. Additionally, PE skill classes usually...
implicated more movement education components that might involve in more theoretical learning, whereas athletic practices implicated more sport competition components, which involve in more tactics or strategies for improving their game.

Conversely, similar amount Concurrent Instruction, Questioning, Negative Modeling, Praise, and Scold behaviors utilized by the participants were evident across both teaching and coaching settings (See Table 1, Table 2 and Figure 1). Reasons for this finding might associated with the following components: the teachers/coaches in this study are real experienced physical educators (evident by five or more years of experiences in their current dual roles position); teaching / coaching are their daily job and they are extremely familiar with various class routines and practice formats; they are also extremely familiar with different instructional styles, and had strong abilities to apply different instructional approaches to meet the needs of different learners. This finding was strongly supported by the following facts: no one used Negative Modeling behaviors in both coaching/teaching settings; seldom Scold behaviors were used in the two settings; Questioning behaviors were used to stimulate students’ critical thinking and learning behaviors; and Praise behaviors were utilized to keep their students/athletes in a high success rate.

Look at the percentage data for the Preinstruction and Postinstruction behaviors: Postinstruction was 22.7% vs. 19.8%, that was coaching higher than teaching; and Preinstruction was 19.8% vs. 16.6%, in which teaching higher than coaching. Based up the observing over this investigation, the following might be the reasons: First, students in the physical skills classes did not know how to perform the tasks, and did not know what the expectations are. Whereas the athletes in the teams already knew the skills, understood the strategies. And the athletes also knew what the expectations from their coach, and they even knew their practice tasks in a particular practice session (they have gone through these routines so many times). Hence, when the physical educator plays the teacher role, they have to provide necessary information to explain/interpret what the learning tasks and the skill components are; how to perform/practice the skills for the PE classes as well. When the physical educators play the coaching role, they need only a few pre-instructions to make the tasks clear and interpret some key points of drills. In addition, their focus are on the performance quality of their athletes; therefore, the coaches always try to provide as accurate, meaningful and pertinent feedback to their athletes as they could, which means they have to use more Postinstruction behaviors to enhance the performance quality of their athletes. This might be what Jones, Housner, and Kornspan (1997) pointed out, athletic coaches need to pay more attention on athletes’ skill levels, tactic or strategy perception and characteristics of personality.

The findings of this investigation were consistent with the findings by Claxton (1988) who found tennis coaches demonstrated significantly more Instruction behaviors (including Preinstruction, Concurrent Instruction and Postinstruction) to their players than any other behaviors (e.g., Praise, Scold, Management, Silence). Findings of this study revealed that in the coaching settings, 64.2% behaviors of the participants belonged to the four Instruction behaviors, and 35.8% behaviors belonged to the other seven behaviors. In the teaching settings, 64.5% behaviors of the participants were also belonged to the four Instruction behaviors.

The findings of this study were also consistent with the findings from Rupert and Buschner’s study (1989), in which they found that the rate for teaching and coaching in the Management behavioral subcategory was 3:1 (Teaching over coaching). The rate for the Management behavioral subcategory in the present study was also 3:1 (10.2% for teaching and 3.8% for coaching). Reasons for physical educators used much less Management behaviors in coaching might associate with: The athletes know the practice routines and expectations; therefore, this allows the coaches to use less Management behaviors to make the practices as expected. Coaches do not require much interpret to their athletes about how to follow the roles, and how to change the practice formations, because they may have the same athletes for several years, which allows them to establish team leadership that has great impact on athletes’ behaviors.

In contrast, Participants used much more Management behaviors in teaching settings because: In PE class students did not familiar with the class routines; did not know how to start and transfer from one activity to another. In order to administer the class activities as what they expected, management teaching behaviors must be used (e.g., tell the organizational details of the class transitions). Moreover, the findings of the current investigation were also consistent with the findings of Rupert and Buschner (1989), in which the physical educators in their study used three times more Praise and Scold behaviors in coaching setting than in teaching settings (6.1% vs. 1.9%). Similarly, the participants in the current investigation used similar quantity but slightly more Praise and Scold behaviors in both teaching and coaching settings, with Praise 9.5% vs. 2.2% in teaching; and Scold 10.5% vs. 2.6% in coaching. This finding reflected that the physical educators were more serious their instructional effects and really cared about the practice quality of their athletes when they play the role of athletic coach (Jones, et al., 1997); whereas when they play the role of physical
education skill teacher, they are more likely to introduce games, techniques, and create fun, enjoyments, and/or
moderate to vigorous physical activity (MVPA) (Martin & Kulinna, 2005).

In conclusion, first of all, the participants exhibit similar quantity of instructional behaviors over the two days of
observation in both teaching and coaching settings with respect to the 11 teaching/coaching behaviors from the ASUOI
(Lacy & Darst, 1989). The lack of significant differences in the observation occasions (Day 1 and Day 2) might have
attributed to insufficient time period, for example, if the study could observe the participants for a longer period (e.g., a
whole semester/season) that may make difference. Secondly, when compare the differences and similarities of the
instructional behaviors by the dual roles physical educators, Positive Modeling and Management behaviors are more
important in teaching settings whereas Hustle behaviors are more important in coaching settings. Other behavioral
variables such as Concurrent Instruction, Questioning, Praise, and Scold behaviors may possess similar function for both
teaching and coaching settings. More studies are necessary to confirm and obtain deeper understanding about the
differences of instructional behaviors between the dual roles for the coaches/teachers.

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