Physical Education in Urban High School Class Settings: Features and Correlations between Teaching Behaviors and Learning Activities

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Abstract

This study examined the features and correlations between teaching behaviors and learning activities in urban high school physical education (PE) class settings using direct instruction model. Participants were sixteen urban high school PE teachers and their students. Results indicated that the teachers spent their class times on the major teaching behaviors were: Informing 28.8%, Structuring 25.4%, Observing 17.0%, and Feedback 9.2%. The students spent their class times on the major learning activities were: Motor Engaged 56.2%, Cognitive Engaged 20.7%, and Waiting for a Turn 9.7%. Correlation analyses revealed that Informing, Questioning, and Feedback teaching behaviors were positively associated with Motor Engaged and Cognitive Engaged learning activities. When the teachers exhibited the behavior category of None of the Above, their students showed no motor and cognitive learning activities engagements. Findings suggested that, PE teachers should develop and employ teaching behaviors that promote and demonstrate physical skills and fitness because those teaching behaviors are positively associated with students' physical activity levels.

Research on teaching in physical education (RT-PE) has accomplished remarkably with respect to how teaching behaviors are related to learning outcomes (Brophy & Good, 1986; Graham & Heimerer, 1981; Keating, Kulinna & Silverman, 1999; Martin & Kulinna, 2004; Silverman, Tyson & Morford, 1988). Silverman (1991) defined RT-PE as "research on what teachers and students do and how this affects or relates to learning and to the social dynamics of the class." (p. 352). This definition is broad and tells us that, when a study is conducted on teaching in physical education, both teacher's teaching behaviors and student's learning activities should be included in the parameters of a study.

Recently, research studies have provided sufficient information regarding the characteristics of effective teaching (Pangrazi, 2007; Kulinna, Cothran & Regualos, 2006; Siedentop & Tannehill, 2000). Based on the work done by previous researchers, the following characteristics were described as effective teaching/learning environments: (a) clear objectives and content covered; (b) well-organized and appropriate expectations; (c) meaningful task and high rates of success; (d) smooth transition and low rates of management time; (e) appropriate guidance and active supervision; (f) high rates in student-engaged time and low rates in student waiting time; and (g) teacher's enthusiasm and equitable support. The characteristics stated above have become important guidelines for training novice teachers to grow to be an effective teacher (Pangrazi, 2007; Kulinna, Cothran & Regualos, 2006; Siedentop & Tannehill, 2000).

A number of previous studies in RT-PE focused on how teacher and student behaviors

were associated with direct instruction, and eventually the direct instruction model in physical education was developed (Anderson, Evertson, & Brophy, 1979; Graber, 2001; Rosenshine, 1979; Rosenshine & Stevens, 1986; Sweeting & Rink, 1999). Rosenshine (1979) illustrated that direct instruction model in physical education possesses clear learning goals, adequate time for instruction and practice which is characterized by appropriate subject matters for students' abilities, low-level cognitive questions but meaningful task and high success by monitoring student performance and providing immediate and specific feedback.

Silverman, Tyson, and Morford (1988) found that students spent their class time on motor skill practice with teacher's feedback was positively associated with their motor learning achievement. Furthermore, regarding how time is spent in physical education classes, Silverman (1991) summarized that most students spent less than 30% of the class time on motor activities but the majority of the time on waiting, explanation/ demonstration, and/or receiving information.

Faucette and Patterson (1990) compared teaching behaviors and students' activity levels taught by specialists versus non-specialists in elementary physical education class settings. The researchers found that specialists employed informing, structuring, questioning, feedback, and reward teaching behaviors whereas non-specialists utilized silent monitoring and attending teaching behaviors, thereby suggesting that different teaching behaviors caused different students' activity levels. The rates of students' activity levels were 35.0% and 16.5% taught by specialists and non-specialists respectively (Faucette & Patterson, 1990).

More recently, researchers have used different observation instruments to investigate, describe, and compare the differences and similarities of teaching behaviors and student learning activities in physical education classes (Banville, 2006; Banville & Rikard**,** 2001; Keating et al., 1999; Martin & Kulinna, 2005; Mitcell & Castelli, 2003). Significant linear correlations between teaching behaviors and learning activities with correlation coefficients ranging from .26 to .42 have been found (Martin & Kulinna, 2004, 2005; Mitcell & Castelli, 2003).

Martin and Kulinna's study (2005) involved 43 physical education teachers (20 from elementary school, 11 from middle school, and 12 from high school). The main purposes of their study were: (a) to determine whether teachers' intentions to teach lessons more active physically were related to teaching behaviors (e.g., demonstrating and promoting fitness); and (b) whether teacher behaviors were associated with how much time their students spent on various activities. They found that general instruction and management behaviors were negatively related to students' moderate to vigorous physical activities; general instruction behaviors, however, were positively associated with students' sitting and standing behaviors.

Although RT-PE have accomplished plentifully, Silverman (1991) pointed out that the majority of studies in teaching physical education were conducted at the K-8 levels using preservice teachers as participants (even though 17 years after Dr. Silverman's famous general review for the accomplishments in the field of research in teaching physical education). Studies at the high school level were very limited, and the features of teaching behaviors and learning activities at the high school level were not well-documented. Hence, the relationship between teachers' teaching behaviors and students' learning activities in high school physical education classes remained unanswered. As a result, the present study was designed to extend previous research (K-8) by not only employing high school (9-12) physical education teachers as participants but also examining the characteristics of effective teaching in high school physical education classes. The purpose of this study was to examine the features and correlations between teaching behaviors and learning activities in urban high school physical education classes.

Methods

Participants and Settings

Sixteen in-service physical education teachers (6 females and 10 males) from three urban high schools in the East Coast of the United States were observed during their regularly scheduled physical education classes. The teaching experiences of these teachers ranged from 5-25 years. They taught physical education skill/activities/fitness classes five days a week, 3-5 classes a day. These teachers and their students were selected because they were cooperating teachers in the physical education teacher education program of the principal investigator's university. Moreover, all the teachers and students in the current study were from the same school district, city, and state.

The demographic information for the three high schools was: (a) school one: grade levels: 9 to 12, class size: 32-34, enrollment: 4,054, ethnicity %: 36 white, 29 black, 15 Hispanic, 22 Asian. (b) School two: grade levels: 9 to 12, class size: 31-34, enrollment: 3,500, ethnicity %: 25 white, 43 black 9 Hispanic, 25 Asian. (c) School three: grade levels: 9 to 12, class size: 32-35, enrollment: 3,024, ethnicity %: 37 white, 10 black, 29 Hispanic, 26 Asian (New York City Department of Education, 2007). The curricular requirements and standards as outlined by the state, district, and schools were: (a) basic motor and manipulative skills, cardiorespiratory endurance, flexibility, muscular strength, endurance, and body composition; (b) to participate in physical activities that develop physical fitness skills, demonstrate fundamental motor, non-locomotor, and manipulative skills, understand the effects of activity on the body and the risks associated with inactivity, understand the relationship between physical activity and individual well being; (c) students will have the necessary knowledge and skills to establish and maintain physical fitness, participate in physical activity, and maintain personal health (New York State Education Department, 2007).

Subject matters involved in the observed physical education classes were basketball/fitness (8 lessons), volleyball/fitness (8 lessons), yoga (6 lessons), dance (4 lessons), soccer/fitness (2 lessons), weight lifting/fitness (2 lessons), and tennis (2 lessons). In order to ensure that the teachers' behaviors were not being influenced, the behavioral categories of the observation instrument were not disclosed to the participants. The teachers were informed that, "We will come to your class videotaping your lesson as whatever it suppose to be."

Instrumentation

The Direct Instruction Behavior Analysis (DIBA, Zakrajsek & Tannehill, 1989) was utilized to collect data. The DIBA system was a systematic observation instrument designed to collect data on teacher and student behaviors, and could be used for teaching performance analysis (Zakrajsek & Tannehill, 1989). The DIBA system characterized those behaviors identified by the researchers of the direct instruction model (Fielding, Kaneenui & Gersten, 1983; Graham & Heimerer, 1981; Rosenshine, 1979). In addition, there was a "Comments" section on the 'DIBA Recording Sheet', which allowed the recorder to write down his/her comments or note about the lesson. These comments or notes would be useful when the researchers explained and illustrated what were the reasons behind the quantitative data. In brief, the DIBA was selected to be the instrument believing to be able to better fulfill the purpose of the current study although there were different instruments in the field of teaching physical education.

The DIBA was composed of 14 categories. The first eight categories were used to determine the instructors' teaching behaviors and the last six categories were used to decide students' learning activities (Zakrajsek & Tannehill, 1989):

1. Teaching Information. Teacher tells, explains, demonstrates, reviews, or summarizes.

2. Teacher Observing. Teacher silently observes, watches, or monitors student performance.
3. Teacher Structuring. Teacher stresses objectives and important points, directs performance, or signals transitions.
4. Teacher Questioning. Teacher asks questions that are intended to evoke a verbal or motor response.
5. Teacher Praise/Encouragement. Teacher praises, commends, accepts, or encourages student performance or attempts.
6. Teacher Feedback. Teacher gives feedback that is immediate, specific, and task relevant (can include correct or incorrect responses).
7. Teacher Controlling. Teacher uses disciplinary comments or actions to criticize or to justify authority.
8. None of the Above. Teacher's behaviors are not related to the instructional process (but exhibited during the class).
9. Motor Engaged. Student is actively engaged in an appropriate motor task/ activity.
10. Cognitive Engaged. Student listens to or reads about subject matter and gains information.
11. Response Preparing. Student gets ready to respond to a learning task.
12. Gets Equipment/Relocates. Student is following teacher's direction or information to get the equipment or move to a different location.
13. Waits for a Turn. Student is waiting in a line for his or her turn to practice a task.
14. Off-Task. Student is not engaged in an appropriate motor or cognitive task. (*pp*. 244-245)

Procedures

After obtaining permission to conduct the study from the Institutional Review Board and the administrators of the high schools, the informed consent and cover letters were delivered to the participants. The purposes of the study were explained to the teachers. The informed consent forms were obtained from both the teachers and the students before the videotaping procedures took place. During the investigation, two lessons were videotaped for each teacher and his/her students. As a result, a total of 32 lessons were videotaped. Two digital camcorders (Sony DCR TRV 350 NTSC, Japan, 2003) were utilized to perform the videotaping tasks. Lessons were videotaped from the moment when the teachers officially started the lesson until the teachers dismissed the class. The time students were in the locker rooms was excluded from videotaping. During each videotaping session, the camcorder was placed in a non-obtrusive location to minimize the reactive effects.

Before data were collected, two observers underwent training with the observation instrument. After four practice coding sessions (120 minute per session) were conducted, the inter-observer agreement (IOA) exceeded 80%. Inter-observer reliabilities for the DIBA were calculated as suggested by "The general formula for computing reliability of interobserver" (Siedentop & Tannehill, 2000; p. 336). The inter-observer reliabilities were checked for each coding day (recording six lessons per coding day).

After all the lessons were recorded, the following procedures were executed: (a) interval recording technique was used to code the videotaped lessons, producing percentage of time that participants and their students spent on the predefined behaviors categories; (b) event recording was also used to code the videotaped lessons, resulting in a frequency of the behavioral categories exhibited by the participants and their students. Rate per minute (RPM) was used as the measurement unit with the event recording to describe and compare the frequencies among the behavioral categories (Siedentop & Tannehill, 2000); (c) the "Recording Procedures" in the DIBA (Zakrajsek & Tannehill, 1989, pp. 245-248) were followed through the entire coding process.

Data Analyses

Descriptive statistics were computed on the 14 behavioral categories. Of these 14 behavioral categories, two categories (Teacher Controlling and Student Off-Task) had no or limited occurrence frequencies. As a result, correlation analyses were conducted between the teaching behaviors and learning activities among the 12 behavioral categories only.

Results

The purpose of this study was to examine the features and correlations between teaching behaviors and learning activities in urban high school physical education class settings using the DIBA system. Fourteen categories in the DIBA were analyzed; wherein eight categories described teaching behaviors and six categories described students' learning activities. For the percentage data, the means and standard deviations were computed from the 32 observed lessons. The RPM data were analyzed using correlational analysis techniques. The general IOA values over the 14 behavioral from the DIBA for the percentage data and the RPM data were .91 and .89 respectively, thus meeting the criteria for systematic observational research (Siedentop & Tannehill, 2000). Based on the above mentioned conditions, the total time recorded on tapes was 1026 min for the 32 lessons. The average length of one lesson in this study was 32 min, which was 71% of a regular 45-min lesson.

The results of this study were summarized as follow. On average, the teachers spent their class time with 28.8% for Informing, 25.4% for Structuring, 17.0% for Observing, 9.2% for Feedback, 3.2% for Questioning, 1.9% for Praise/ Encourage, .3% for Controlling, and 14.1% for None of the Above behaviors in a lesson. The students spent their class time with 56.2% on Motor Engaged, 20.7% on Cognitive Engaged, 6.8% on Response-Preparing, 6.4% on Get-Equipment/Relocation, and 9.7% on Waiting for a Turn in a lesson.

These features were confirmed by the RPM data. With respect to the teaching behavioral variables, the RPM for Informing was 3.29, for Structuring was 2.54, for Observing was 1.20, for Feedback was .71, for Praise/Encourage was .14, for Controlling was .01, and for None of the Above was 1.28. In regard to students' activity variables, the RPM for Motor Engaged was 5.3, for Cognitive Engaged was 1.90, for Response Preparing was .31, for Get-Equipment/Relocation was .68, and for Waiting for a Turn was .98. The descriptive statistics of the 13 behavioral categories are presented in Table 1.

Furthermore, the correlation analysis revealed that the following five correlation coefficients (*rs*) were significant ($p < .05$) and meaningful: teacher Informing associate with students' Motor Engaged ($r = .558$), teacher Questioning associate with students' Cognitive Engaged ($r = .406$), and teacher Feedback vs. students' Cognitive Engaged ($r = .362$). It was noted that, when the teachers exhibited the behaviors of None of the Above, their students showed no motor and cognitive activities engagement (None of the Above associate with Motor Engaged, $r = -.510$; and None of the Above associate with Cognitive Engaged, $r = -.516$). The correlations between the teaching behaviors and the learning activities are presented in Table 2.

Discussion

The objectives of this study were to examine the features and correlations between teaching behaviors and learning activities in urban high school physical education class settings. It was important to note that the results of this study were based upon and limited to the behavioral categories and the definitions of the DIBA instrument; and the results were also affected by the nature of the subject matters involved in the 32 observed lessons. We realized that the teachers in the current study spent their class time on the seven different teaching behaviors in different ways when comparing with the previous studies in the RT-PE literatures. The characteristics of effective teaching (e.g., clear objectives and content covered, well-organized and appropriate expectations,

Table 1

Descriptive Statistics of Interval and Event Recording for Thirteen Categories from Thirty-two Classes*

Variables	Percentage (%)		RPM Data	
	M	*SD*	*M*	*SD*
Teaching Behaviors				
Informing	28.828	14.788	3.294	2.251
Observing	16.984	12.258	1.197	.937
Structuring	25.401	14.065	2.536	1.524
Questioning	3.168	2.752	.363	.781
Praise/Encourage	1.897	2.578	.144	.246
Feedback	9.248	6.568	.712	.535
Controlling	.352	.926	.014	.036
None of the above	14.149	12.918	1.278	1.339
Learning Activities				
Motor-engaged	56.224	15.793	5.285	2.545
Cognitive-engaged	20.737	10.382	1.904	1.176
Response-preparing	6.769	4.389	.308	.296
Equipment/Relocating	6.396	4.663	.679	.458
Waiting for a Turn	9.745	11.897	.975	.887

*Students Off-Task category in the DIBA were not able to enter the Descriptive Statistics due to no occur frequency.

meaningful task and high rates of success, and smooth transition and low rates of management time) were fund or identified through out the 32 lessons. We also realized that the students in the present study spent more class time on Motor Engaged (56.2%) and Cognitive Engaged (20.7%) than the previous studies in the RT-PE literatures. These two learning activities (Motor Engaged and Cognitive Engaged) were regarded as instructional products by the previous researchers (e.g., Martin & Kulinna, 2004; Rink, 2003; Silverman, 1991; Siedentop & Tannehill, 2000).

Specifically, the findings of this study were quite different from those of the Martin and Kulinna's study (2005), in which the researchers found that teachers spent their class time on Instructing (44%), Managing (28%), Observing (20%), and Demonstration (3%). Furthermore, the students in their study spent time on the five activities as follow: Standing (39%), Sitting (21%), Lying Down (1%), Walking (21%), and Motor Engaged (18%). Martin and Kulinna (2005) reported that only 4% of class time was spent on Motor Engaged activities and 61% of class time was spent on non-motor-engaged activities (e.g., sitting, standing, or lying down). On the contrary, the students in the current study spent 56.2% of class time on physical activities or Motor Engaged activities; 20.7% of class time on Cognitive Engaged; and only 23% of class time on other three non-motor-engaged activities. These findings reflected that the students in the current study had higher rates of academic learning time than that of the previous studies, thus demonstrating the characteristics of effective learning environment.

Table 2
Correlations among Teaching Behaviors and Students Activities by Event Recording for Twelve Variables from DIBA System (N = 32)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Inform	-											
Observ	-.236	-										
Struct	.121	-.496**	-									
Quest	.100	-.204	-.156	-								
Pra/Enc	-.088	-.112	.011	-.050	-							
Feedba	.174	-.156	.028	-.143	.407*	-						
Nonabv	-.302	.297	-.084	.011	-.222	-.399*	-					
MotorE	.588**	.069	.249	-.285	-.128	.215	-.510**	-				
Cognit	.406*	-.295	.172	-.021	-.199	.362*	-.516**	.146	-			
RePrep	.204	-.044	.057	.266	-.079	.090	-.168	.296	.085	-		
EquiRe	-.378*	.058	-.306	.035	.186	.001	.036	.385*	.180	.021	-	
Waiting	-.663**	-.095	-.101	.175	.330	-.063	.115	-.409*	-.269	.015	.349*	-

Note. Two variables (Controlling and Off-Task) in the DIBA were not used for correlation analysis because the RPM were too low or no occur frequency. Inform = Informing, Observ = Observing, Struct = Structuring, Quest = Questioning, Pra/Enc = Praise/Encourage, Feedba = Feedback, Nonabv = None of the Above, MotorE = Motor-engaged, Cognit = Cognitive-engaged, RePrep = Response-preparing, EquiRe = Equipment/Relocating, Waiting = Waiting for a turn. * $P < .05$, ** $P < .01$.

The national goal for school physical education programs emphasized that 50% or more of class time should be spent with students being physically active [U.S. Department of Health and Human Service (USDHHS), 2000]. In order to meet the national goal, Martin and Kulinna (2005) suggested urgently, teachers in the field of physical education should possess knowledge and class management skills that will enable them to provide physical activities for their students with maximizing opportunities for appropriate practices.

Obviously, the findings of the present study were different from those of Silverman (1991) who stated in his RT-PR review that the majority of the students engaging in motor activities were about 30% of their class time, and about 15% of which was spent on Motor Engaged at an appropriate level. Furthermore, most of those teachers spent about 25% of their class time on explanation/demonstration or informing.

With regard to the relationships between teaching behaviors and learning activities, the findings of this study were inconsistent with the findings of Martin and Kulinna (2005), in which the researchers reported that general instruction behaviors (Informing, Questioning, and Feedback) were negatively related to students' Motor Engaged activities. In contrast, the current study found that the general instruction behaviors (Informing, Questioning, and Feedback) were positively related to students' learning activities (e.g., Informing associate with Motor Engaged r = .558, Questioning associate with Cognitive Engaged r = .406, and Feedback associate with Cognitive Engaged r = .362).

Furthermore, in contrast with the findings from the previous studies (Faucette & Patterson, 1990; Martin & Kulinna, 2005; Mitcell & Castelli, 2003), we would like to conduct the following discussion in regard to the percentage of class time the teachers and students spent on each of the predefined 'Teaching Behaviors' and 'Learning Activities'. The above findings might be related to the following factors:

Subject Matters of the Physical Education Classes. The subject matters of the physical education classes included in this investigation were basketball/fitness (8 lessons), volleyball/ fitness (8 lessons), Yoga (6 lessons), dance (4 lessons), soccer/fitness (2 lessons), weight lift/ fitness (2 lessons), and tennis (2 lessons). Among the 32 physical education lessons, 12 lessons were individualized activities and 20 lessons were characterized by small group exercises. Teaching individualized activities, such as circulate fitness exercises, modern dances, martial arts, and yoga, demanded more instructional behaviors (e.g., informing, structuring, questioning, feedback, and reward); but students' Motor Engaged activities could significantly increase because teachers' instructional behaviors and students' activities occurred almost at the same time (Faucette & Patterson, 1990; Graber, 2001; Mitcell & Castelli, 2003; Rink, 2003). When applying the teaching-learning pattern in individual activities to teach general physical fitness for team sports (e.g., basketball, volleyball, and soccer), the activities become 'individualized'. This might explain why the teachers and students spent higher percentages of class time on teacher Informing (28.8%), teacher Structuring (25.4%), and students' Motor Engaged (56.2%). Hence, these findings demonstrated that the participants appeared to be practitioners who knew how to maximize activity-learning time of the students and they had the skills to motivate their students to participate in the activities they offered.

Impacts of National Physical Education Standards. Researchers (Banville, 2006; Mitcell & Castelli, 2003; Mozen, 2005) indicated that, in recent years, the six national standards for physical educated persons and the 10 beginning teacher standards established by the National Association for Sport and Physical Education (NASPE) have had great impact on physical education at all school levels. In regard to the characteristics and backgrounds of the participants, they all possessed teacher certificates, had

bachelor or higher degrees, had five or more years of experiences in teaching physical education in public schools, were involved in academic activities in physical education teacher education programs at local universities by serving as cooperating teachers, and were familiar with and were carrying out the national standards in their daily teaching. These characteristics and background made them unique in the present study. These characteristics might also explain the higher percentage of time students engaging in motor activities (56.2%) in the current study than that (18.0%) in the Martin and Kulinna's (2005) study.

Several factors might explain the current findings in that 14.1% of class time was on None of the Above teaching behaviors and 9.7% of class time was on Wait for a Turn activities. First, 18 out of 32 classes in this investigation had class rosters of over 60 students. Although the teachers were well-trained practitioners, they still could not overcome the class oversize issue. Second, the main reason causing the students to have higher waiting time was insufficient equipment and facilities. Third, it should be recognized that the None of the Above behaviors and the Waiting for a Turn activities were the two major areas requiring special attention if one wanted to improve the effectiveness of teaching in high school physical education.

The Correlations between Teaching Behaviors and Learning Activities. The findings showed that the following three correlations among teaching behaviors and learning activities were significant and had practical meaning to the physical education professionals: Teacher Informing was associated with Students Motor Engaged; Teacher Questioning was associated with Students Cognitive Engaged; and Teacher Feedback was associated with Students Cognitive Engaged. These findings suggested that teachers should carefully plan and implement their instructions with Informing (teacher tells, explains, demonstrates, reviews, or summarizes); Questioning (teacher asks questions that are intended to evoke a verbal or motor response); and Feedback (teacher gives feedback that is immediate, specific, and task relevant) to ensure the quality of physical education (Graham, Holt/Hale & Parker, 2006; Mohnsen, 2003; Pangrazi, 2007; Rink, 2003). When teachers were involved in none-instructional behaviors, their students would exhibit non-learning activities (e.g., None of the Above was associated with none Cognitive Engaged; and None of the Above was associated with none Motor Engaged). These findings suggested that, since the most important purpose of a physical education class was to maximize students' activity/academic learning time-physical education (ALT-PE) (Graham, Holt/ Hale & Parker, 2006; Mohnsen, 2003; Parker, 1989; USDHHS, 2000), teachers should carefully choose their subject matters and employ teaching behaviors that would enable them to increase students' engagement in motor and cognitive learning activities (Culpepper & Tarr, 2007; Hagood, Lynn & *Ratliffe*, 2007; Mohnsen, 2003; Pangrazi, 2007; Siedentop & Tannehill, 2000).

In summary, the findings of this study provide a set of new data and information that describe the features and interrelationships between teaching behaviors and learning activities in urban high school physical education class settings. On average, high school students in the current study involved over 50% of class time in Motor Engaged activities, and they reached the national goal for school physical education programs recommended by the USDHHS (2000). The significant correlations between teaching behaviors and learning activities revealed that teaching behaviors of Informing, Questioning, and Feedback are positively associated with students' Motor Engaged and Cognitive Engaged learning activities. It is further suggested that physical education teachers should develop and employ teaching behaviors that promote and demonstrate physical skills, fitness and activities, because those teaching behaviors are positively associated with students' physical activity levels.

Finally, the features summarized from the 32 observed physical education lessons in this study

seem to imply that the major characteristics of effective teaching and learning environment, that is, "teachers who present a clear explanation and demonstration, allocate time for motor skill practice, and structure practice so that students are appropriately or successfully engaged will promote student learning." (Silverman, 1991, p. 357) do occur during the present investigation. Researchers should continue to inquire, to explore, and to conduct research in high school physical education settings; and share the findings to their colleagues. By doing so, our physical education profession will be able to stand out in the educational system.

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