

Promoting college students' social skills in physical education classes – A combination of "Are You Square?" game and Fair Play game

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Promoting college students' social skills in physical education classes - A combination of “Are You Square?” game and Fair Play game

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Abstract

This study examined the effects of an eight-week physical education (PE) program enriched with a combination of the “Are You Square?” game¹⁾ and the Fair Play game²⁾ on Chinese college students' social skills in PE classes. Participants were 63 male students at Sanya University who selected the basketball course for the semester. The PE teacher randomly assigned those students to two basketball classes, an intervention class ($n = 34$) and a control class ($n = 29$). The intervention class received a program using a combination of the “Are You Square?” game and the Fair Play game, while the control group received the general teaching program. The 11 Item of Social Skills Inventory was administered to all students in the two classes at both the beginning and the end of the eight-week program. The two factor (treatment $\times$ time) analysis of variance was used to analyze the differences between the social skills of students in the intervention class and control class. The results revealed that there was only marginally significant interaction ($0.05 < p < 0.10$) with regard to verbal skills, on the other hand, there was significant interaction ($p < 0.05$) with regard to nonverbal skills, with significant improvement in the intervention class. The findings suggested that the combined-games program could make a noteworthy contribution to the development of college students' social skills, especially nonverbal skills in PE classes.

Key Words: social skills, college students, physical education classes, game

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1. Introduction

Over the last 20 years, a number of quantitative studies have demonstrated strong evidence of social skills development in PE³⁾. Educators have attempted to put social skills training into practice and based on previous studies and teaching experiences, some researchers have developed or completed models and programs on social development. Sport pedagogy towards as PE

witnessed the development of those models and programs, for example, Metzler⁴⁾ identified eight different instructional models that are commonly implemented in PE today (e.g., Cooperative Learning, Sport Education, & Teaching Personal and Social Responsibility). To date, considerable interests have been shown in applying instructional models and their hybridizations in PE to promote social skills of students in primary and secondary

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school levels in western and other countries. However, studies on the college level were corresponding limited, especially in China. With regards to the limited studies, Wei⁵⁾ using an experimental approach examined the influences of a volleyball PE program that adopted the cooperative learning model on college students' social skills. The findings indicated that program promoted students' social skills and improved interpersonal relationships. Wang and Sugiyama⁶⁾ examined the effects of a new PE program on female college students' social skills. The program provided students with more opportunities to communicate with others in the classes by encouraging them to think of new exercises and discuss them with other team-members. The new program was found to have significantly influenced students' social skills. In China, the MEPRC stipulate that developing students' physical skills is the main objective of PE⁷⁾. Therefore, the development and implementation of models and programs should to be combined with teaching strategies of physical development. The purpose of this study was to investigate the effects of eight-week basketball class enriched with a combination of "Are You Square?" game and Fair Play game on college students' social skills in PE.

"Are You Square?" (hereafter referred to as RUS) game¹⁾ is played on a square ground which has four stations marked by objects (i.e., a hula hoop) or paintings in four corners. A same number of identical objects such as balls are placed within each station. Students are arranged equally into four teams and members of each team are in or beside of the station which belong to their team. The game challenges students to bring as many objects from other stations as they can to their own station in a limited time frame. The winning team is the team with the most objects. Figure 1 shows the game

set-up and Figure 2 shows the game in action. Students in the game learn how to identify difficulties and deal with frustration when it is emerging. According to the content and feature of the game, it can be adapted to provide students with much opportunities of physical skill practices and communications, thus can contribute to students' development of both physical and social skills. There are some important game rules formulated as the following:

- (1) When game is started by a opening whistle, each student run to any other station to pick one object and bring it to his/her own station.
- (2) At a time each student can take only one object.
- (3) Student can not interfere with students from other groups (e.g., no pushing, blocking, etc.)
- (4) Students can not hide or block other stations.
- (5) There is a game duration (typically is one minute) which must match the difficulty level of the activity.
- (6) When the game is closed by an ending whistle, students must stop moving objects. Objects within each station will be counted for the group's score. If a student do not arrive to his/her station at the end, he/she must leave the object on the floor (or return it to the station which it was taken) and then go back to his/her station.

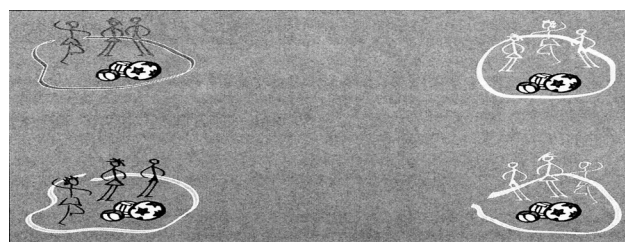


Figure 1. RUS game set-up¹⁾

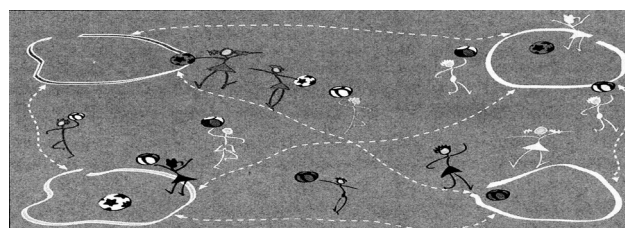


Figure 2. RUS game in action¹⁾

The Fair Play game is designed to teach students' positive behaviors and reduce inappropriate ones in PE classes through using the dependent group contingency. Dependent group contingency is that all members of a group can be reinforced if the selected member(s) accomplished the goals of his/her/their group. There are five steps of preparation will have to be completed to implement the game in PE: (1) Define the target behaviors; (2) Identify the reinforcers; (3) Teach the Fair Play behaviors; (4) Select unidentifiable students; and (5) Prepare the point system chart²⁾.

(1) Define target behaviors

Target behaviors are those positive behaviors which students will be expected to perform (e.g., be a good listener & praising peers) or in some cases those inappropriate ones which students will be asked to reduce⁸⁾. Target behaviors should be defined according to students' age, gender, and behavioral level. The priorities of the class context (e.g., students seem to be not willing to follow rules when practicing) should also be considered when selecting target behaviors. Table 1 shows some examples of target behaviors.

Table 1. Examples of target behaviors

On-task behaviors

- Pass the ball only use the skills learned in the lesson
- Pass the ball within five seconds
- Kick the ball 20 times in one minute

Respect

- Follow the rules of the class
- Be a good listener
- Follow the rules of the game

Be helpful

- Support peers by cheering them up during the game
- Help peers get up if they fall
- Help peers set up equipments

(2) Identify reinforcers

Fair Play game employs dependent group contingency to encourage students to learn target

behaviors. Students will receive reinforcers if parts of them have achieved the specified goals in performing target behaviors. There are four categories of reinforcers that teachers may consider using in Fair Play game. They are tangible reinforcers (e.g., stickers & trinkets), activity-oriented reinforcers (e.g., plus time of practice), social reinforcers (e.g., praise), and generalized reinforcers (e.g., points which can be accumulated to exchange for a final prize). However, snacks and soft drinks are not recommended.

(3) Teach the Fair Play behaviors

Teachers should provide detailed explanations of the Fair Play behaviors during the first and second unit so that students can understand what behaviors to perform, how and when to perform those behaviors. In the coming units, inform students the daily criterion of performing behaviors and positively recognize students' exhibitions of those behaviors.

(4) Select unidentifiable students

Students of the class will be divided into a few numbers of teams in the first lesson and the division will be kept throughout the unit of instruction (e.g., a football unit). In each lesson, teacher tells the class that one student (or a few students) in each team will be randomly selected and the performance of Fair Play behaviors of this (or these) student(s) will be recorded. But the teacher will never reveal the name or identity of the student(s) to the class, even to the selected student(s). If the selected student(s) achieves the goals set up for that lesson, the whole team will receive rewards at the end of the lesson. The selected student(s) will be different each lesson and after each student has been selected once, then one (or few) of them will be selected again.

(5) Point system chart

It needs to prepare a chart on which each team's

name was written horizontally. Add two columns under each team's name, one for goals and the other with goals achieved at that lesson. All teams will begin with the same goal to be achieved (i.e., perform at least one Fair Play behavior in the class). In the coming each lesson, one behavior will be added if all the goals have been achieved. However, if all the goals have not been achieved, the next lesson's goals will remain same. A team achieved its established goals will receive a point every

lesson. Members of a team will receive reinforcers if the team has been rewarded with a specified number of points. If a team has been awarded the earned points after certain (e.g., five) consecutive lessons the teacher may then consider awarding points every-other day. Thus, in order to be rewarded, the team must accomplish the goals on two consecutive days. Table 2 is an example of the Fair Play Game Chart.

Table 2. Example of a Fair Play game chart in a 15-day volleyball unit²⁾

DAYS	RED TEAM GOALS		BLUE TEAM GOALS		PURPLE TEAM GOALS		GREEN TEAM GOALS	
	Set	Achieved	Set	Achieved	Set	Achieved	Set	Achieved
1.	1	☺	1	☺	1	☺	1	☺
2.	2	☺	2	☺	2	☺	2	☺
3.	3	☺	3	☺	3	☺	3	☺
4.	3	☺	4	☺	4	☺	4	☺
5.	4	☺	4	☺	5	☺	5	☺
6.	5	☺	4	☺	6		5	☺
7.	6		5	☺	6	☺	6	☺
8.	6	☺	6		7		6	
9.	7		6	☺	7	☺	6	☺
10.	7	☺	7		8		7	
11.	8	☺	7	☺	8	☺	7	☺
12.	8		7	☺	9		8	
13.	8	☺	8		9	☺	8	☺
14.	9		8	☺	10		9	
15.	9	☺	9		10	☺	9	☺
TEAM POINTS	9		8		10		9	

2. Method

Design of RUS game

This game is played on a square ground that has four stations marked by paintings in four corners. The boundary lines of the ground are marked using tapes. There are three basketballs placed within each station. Students are arranged in four teams and each team has its own station. When playing the game, students must move the basketballs from other stations to their own station within a limited

time frame (one minute). Students must move the basketballs by using the skills and tactics for that lesson. Three students of each team have to join each time when playing the game, as the quality of students' learning experiences is greater in small-group activities than in large-group activities⁹⁾. Each time the game is started and ended by the sound of a whistle. Table 3 shows the skills and tactics that students are demanded to use in each lesson.

Table 3. Skills and Tactics in RUS

	Lesson							
	1	2	3	4	5	6	7	8
Skills	Holding ball Running	Holding ball Running	Holding ball Running Passing ball	Holding ball Running Passing ball	Dribbling	Dribbling	Dribbling Passing ball	Dribbling Passing ball
Tactics	Individual	Individual	Team	Team	Individual	Individual	Team	Team
Number	3	3	3	3	3	3	3	3

Preparation of Fair Play game

(1) Target behaviors

The target behaviors defined in this study are those positive behaviors that students are expected to perform and those inappropriate behaviors that students are asked to avoid during they play RUS game (Table 4).

(2) Reinforcers

The reinforcers in this study are semester scores.

(3) Point system chart

All teams will begin with the same goal (i.e., listening). In the coming lesson, behaviors of one goal will be added if all goals have been achieved. However, if all goals have not been achieved, the next lesson's goals will remain the same. A team achieving its established goals will receive a point every lesson. Members of a team will receive one semester score if the team has been rewarded two points. If a team has been consecutively rewarded in four lessons, then the teacher will award the team one score for one earned point in every coming lesson. Thus, in order to be rewarded, the team must accomplish all goals each day (Table 5). For the goal of inappropriate behaviors, if no such behaviors have been performed, the goal will be considered as has been achieved.

Table 4. Examples of target behaviors in this study

Respect

- Be a good listener
- Follow the rules of the RUS game

Be helpful

- Support peers by cheering them up during the game
- Encourage peers using physical contacts (e.g., high-fives & touch fists)

Inappropriate behaviors

- Use verbal violence
- Use physical violence

Table 5. Fair Play Game chart for eight-day RUS

Lesson	Team	Target behavior			Point
		Respect	Be helpful	Inappropriate	
Example (Lesson 1)	A	✓			1
	B	X			0
	C	X			0
	D	✓			1
1	A				
	B				
	C				
	D				
2	A				
	B				
	C				
	D				
3	A				
	B				
	C				
	D				
4	A				
	B				
	C				
	D				
5	A				
	B				
	C				
	D				
6	A				
	B				
	C				
	D				
7	A				
	B				
	C				
	D				
8	A				
	B				
	C				
	D				

Instrument: 11 Item of Social Skills Inventory (11-SSI)

The Social Skills Inventory (SSI)⁽¹⁰⁾⁽¹¹⁾ is a standardized and representative measurement created to assess adults' social skills in six subscales: emotional expressivity, emotional control, emotional sensitivity, social expressivity, social control, and social sensitivity. Emotional expressivity, emotional control, and emotional sensitivity are subscales examine people's nonverbal skills; while social expressivity, social control, and social sensitivity determine people's verbal skills. As students' social behaviors learn in one setting (e.g., PE classes) can be transferred or

generalized to other domains (e.g., family & community)¹²⁾, students' social skills gain in PE classes may be different from those they use in daily lives¹³⁾. By considering the differences, Ding and Sugiyama¹⁴⁾ developed the 11-SSI to measure Chinese college students' social skills in PE classes. The items in the 11-SSI were selected from the Riggio's SSI and revised according to the contexts of PE and social culture of China. The 11-SSI examines college students' basic communication skills in PE classes across two subscales which are verbal skills (five items) and nonverbal skills (six items). For example, the items "It is difficult for me to speak when facing all class members" and "I feel very uncomfortable when being criticized" determine students' social expressivity and social sensitivity, which assess their verbal skills in PE classes; while the items "When I feel sad or depressed, others can hardly detect my feelings" and "I am good at express myself by eyes" examine students' emotional control and emotional expressivity, which reflect their nonverbal skills in PE classes. Each item must be answered on a five-point Likert scale including two negative and three positive agreement responses ranging from "not at all like me" to "exactly like me." Each item is corresponded with an identical score so that the subscales are scored ranging from 5 to 30. The scale has demonstrated an internal consistency reliability coefficient of 0.92 and content validity with a sample of Chinese college students¹⁴⁾.

Participants and Procedure

The study was conducted between September 2014 and January 2015. Participants were 63 male students at Sanya University who selected the basketball course for the semester. The PE teacher randomly assigned those students to two basketball classes, an intervention class ($n = 34$) and a control

class ($n = 29$). The intervention classes received the combined-games program, while the control class received the general teaching program. Students of both classes were introduced to the key skills they needed to master before practice or playing the game. The control class used traditional skill- and drill-based approaches. In the traditional drill and skill approach, students do the drills of passing, and dribbling of the basketball in place, and teachers model the correct way of executing the skill. In the combined-game program, students practice the basketball skills within the context of the RUS game demanding personal and teamwork-related challenges, and highlighting the learning of social aspects such as self-control, self-disclosure, and personal and social responsibility. For the intervention class, students were divided into four teams in the first lesson and the division was maintained throughout the duration of the program; the teacher provided detailed explanations of the RUS game and Fair Play behaviors during the first and second lesson to make students understand what, how, and when to perform such behaviors. In the coming units, inform students the daily criterion of performing the behaviors and positively recognize students' demonstrations of those behaviors; in each lesson, the teacher tell the class that one student (or a few students) from each team will be randomly selected and the performance of Fair Play behaviors of this (or these) student(s) will be recorded. However, the teacher will never reveal the name or identity of the student(s) to the class, not even to the selected student(s). If the selected student(s) achieves the goals set up for that lesson, the whole team will receive rewards at the end of the lesson. The selected student(s) will be different in each lesson, and after each student has been selected once, one (or a few) of them will be selected again. The 11-SSI was administered to all

students in the two classes at the beginning and at the end of the program, respectively.

Data Analysis

The two factors (treatment $\times$ time) ANOVA was used to analyze the differences between the social skills of the intervention group students and the control group students.

3. Results

The results revealed that there was only marginally significant interaction ($F = 2.95$, $0.05 < p < 0.10$) with regard to verbal skills, on the other hand, there was significant interaction ($F = 4.06$, $p < 0.05$) with regard to nonverbal skills, with significant improvement in the intervention class. (Table 6, Figure 3, 4, 5)

Table 6. Time- and group- based differences in social skills

		Before		After		F ($df = 1, 62$)		
		Mean	SD	Mean	SD	Time	Group	Interaction
Verbal	Experimental	14.73	3.58	15.47	3.86	2.37 [†]	1.33	2.95 [†]
	Control	15.02	3.79	15.21	4.02			
Nonverbal	Experimental	17.93	4.02	19.54	3.74	8.96**	0.43	4.06*
	Control	17.69	4.19	18.62	4.25			
Total	Experimental	32.81	4.85	34.72	4.61	5.72*	0.05	3.07 [†]
	Control	32.85	5.74	33.77	5.91			

* $p < .05$, ** $p < .01$, [†] $0.05 < p < 0.10$.

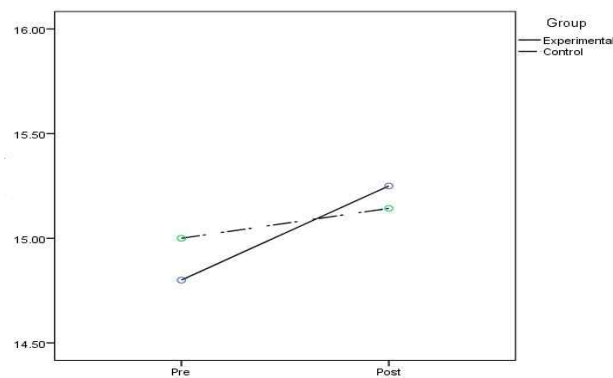


Figure 3. Difference in verbal skills

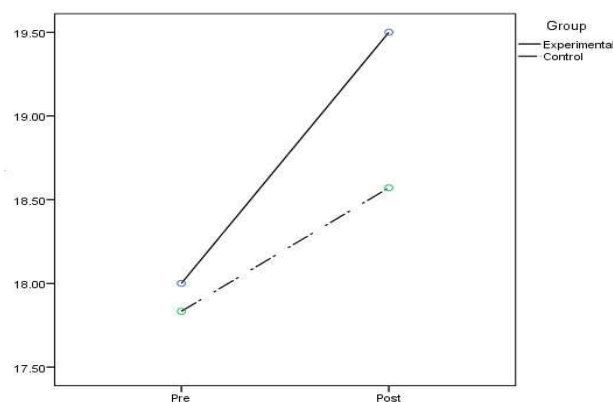


Figure 4. Difference in nonverbal skills

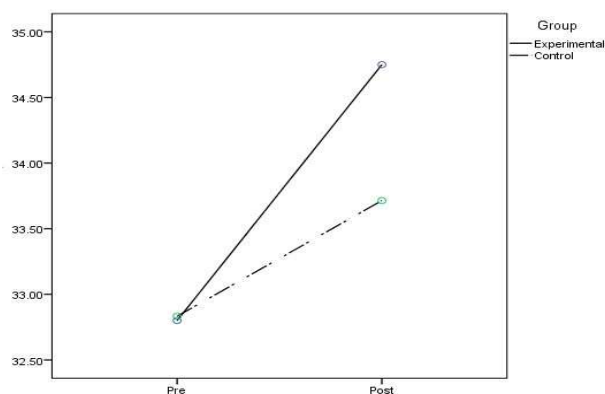


Figure 5. Difference in total skills

4. Discussion

Many professionals believe that students automatically develop positive social behaviors through engaging in games and physical activities¹⁵⁾. However, other researchers have suggested that students' social skills were not automatically developed¹⁶⁾. Games are essential and indispensable parts in school PE programs. As the RUS game and Fair Play game have certain effects on students' psychosocial development, this study used the combination of them in the experimental class. The combined games has been validated and tested, showing that it is an effective intervention. The using of the combined games during PE classes contributes to improving students' social skills. Through their teams, students built a unique social system among the members of their teams and other teams. There are many practices of basketball skills in game situations and more class time is spent on these situations. The combined games build a competitive context in which students may easily exhibit undesirable behavior (e.g., break rules or show aggression). In the games, students challenged themselves to reduce the inappropriate behaviors and learn the positive ones. Therefore, the combined games created a competitive environment in which students can develop both their physical and social skills. Social learning does not seem to come as a natural outgrowth of

participation in PE. It must occur when students socially interact with others in a carefully planned learning environment that provides favorable contexts for learning and opportunities to practice and gain satisfaction in practicing¹⁷⁾. The approach used by the teacher in the intervention class is the construction of a contingency learning environment in which students learn target behaviors through physical activities which require self-control. In order to create this environment, it is important to formulate rules for student behavior and administer the teaching process carefully. It should be made clear that the environment is built on the foundation of physical practices. The combined game is a tool that PE teacher may consider integrating into their PE program to develop students' social skills. Physical activity is what makes PE unique from other school subjects. The development of skills is a primary objective for the teaching of PE. Development of a physical skill benefited by avid practices of that skill, and without practice activities, participants will demonstrate little improvement¹⁸⁾. In this study, we use the combination of the two games in the intervention class. A benefit of the combination of the two games is that it can contribute to students' development of physical skills while creating more opportunities for developing basic motor skills such as passing, dribbling, or defending; another positive feature of

these games is that they also benefit students' social skills development. The combination of two games is suitable for college PE. As the rules are relatively easy for college students to understand, it can be presented to students and then immediately put into practice. In a practice unit, members of each team should remain small in number in order to promote activity time and opportunities to learn. Small-sized-group games may not only create greater opportunities for skill development but also provide more opportunities for the development of social responsibilities. Teachers should promote the skill level along with students' skills acquisition. Students' movements during the game should highly connect to the skills that students learn during class. Students' performance in games should be just as they are when performing skills in a practice drill. PE teaching, however, should offset the time deficit by minimizing time spent in management and maximizing time spent on physical skill development. As Darst and Pangrazi¹⁸⁾, and Rink¹⁹⁾ suggested, PE lesson should engage students in skill practice for at least 50 percent of the available class time. Students are more likely to improve their skills and enjoy an activity if they have the opportunity to remain involved²⁰⁾. Researchers and educators should have the sense to design and implement the games in which students can spend a great deal of time practicing physical skills and social skills at the same time.

References

- 1) Eldar E, Morris D, DaCosta R, & Wolf T (2006): "Are You Square?" a game for developing self-control and social skills. *Strategies*, 19: 17-21.
- 2) Vidoni C & Ulman JD (2012): The fair play game: Promoting social skills in physical education. *Strategies: A Journal for Physical and Sport Educators*, 25(3): 26-30.
- 3) Morris GSD (2003): Social responsibility through physical activity. In A. Laker (Ed.), *The Future of Physical Education: Building a New Pedagogy* (pp. 54-81). London: Routledge.
- 4) Metzler MW (2011): *Instructional Models for Physical Education* (3rd Ed.). Scottsdale, AZ: Holcomb Hathaway
- 5) Wei Z (2008): Experimental Study about Influences of Cooperative Learning Pattern on College Students' Social Adaptation Ability in Physical Education. Master's Dissertation, Yunnan Normal University, China.
- 6) Wang XL & Sugiyama Y (2014): Enhancing social skills through college physical education. *Journal of Physical Education and Sport*, 14(2): 158-163.
- 7) Ministry of Education of the People's Republic of China (MEPRC) (2002): *Guidelines for National College PE Curriculum*.
- 8) Cooper JO, Heron TE, & Heward WL (2007): *Applied Behavior Analysis*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- 9) Peterson SE & Miller JA (2004): Comparing the quality of students' experiences during cooperative learning and large-group instruction. *The Journal of Educational Research*, 97(3): 123-133.
- 10) Riggio RE (1986): Assessment of basic social skills. *Journal of Personality and Social Psychology*, 51, 649-660.
- 11) Riggio RE (1989): *Manual of the Social Skills Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- 12) Maureen RW, Nicole DB, & Lindsay EK (2014): Assessing impact of physical

- activity-based youth development programs: validation of the Life Skills Transfer Survey (LSTS). *Research Quarterly for Exercise and Sport*, 85: 263-278.
- 13) Sugiyama Y, Shibukura T, Nishida T, Ito T, Sasaki B, & Isogai H (2010): Development of scales for psychosocial skills in physical education and life skills. *Journal of Health Science*, 32: 77-84.
- 14) Ding, J., & Sugiyama, Y. (2016). Development of a Scale to Assess Chinese College Students' Social Skills in Physical Education Classes. *Journal of Heal Science*, 38, 11-19.
- 15) Ward P (1999): The saber-tooth project: curriculum and workplace reform in middle school physical education. *Journal of Teaching in Physical Education*, 4: 379-489.
- 16) Buchanan AM (2001): Contextual challenges to teaching responsibility in a sports camp. *Journal of Teaching in Physical Education*, 20: 155-171.
- 17) Duncan RO & Watson HB (1960): *Introduction to Physical Education*. New York: The Ronald Press Company.
- 18) Darts P & Pangrazi R (2001): *Dynamic Physical Education for Secondary School Students* (4th ed.). Boston: Allyn and Bacon.
- 19) Rink J (2006): *Teaching Physical Education for Learning* (5th ed.). Boston: McGraw-Hill.
- 20) Arentt M (2001): The effect of sport-based physical education lessons on physical activity. *Physical Educator*, 58(3): 158-168