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## ORIGINAL

# CAN SPORT EDUCATION IMPROVE ATTITUDES TOWARDS PHYSICAL EDUCATION IN SECONDARY SCHOOL?

## ¿PUEDE LA EDUCACIÓN DEPORTIVA MEJORAR LAS ACTITUDES HACIA LA EDUCACIÓN FÍSICA EN SECUNDARIA?

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### ABSTRACT

The objective of this research was to examine the influence of a Sport Education season on students' attitudes towards Physical Education (PE). The participants were 53 (31 male and 22 female;  $M_{age} = 15.13$ ,  $SD_{age} = 1.40$ ) secondary school students who took part in a Sport Education intervention consisting of fourteen 55-minute sessions. A quasi-experimental design with no control group and with pre-test and post-test measures was adopted. The results derived from MANOVA test showed a significant increase in the levels of perception of PE and the teacher, difficulty of PE, usefulness of PE and preference for PE in students after a Sport Education season. No significant multivariate effects were found for age, gender or after-school sport. These

findings are discussed highlighting the importance of Sport Education in the development of the students' attitudes towards PE as a means to promote their comprehensive education.

**KEYWORDS:** model-based practice, pedagogical models, Physical Education teaching, attitudinal domain, curriculum and teaching.

## **RESUMEN**

La presente investigación tuvo como objetivo analizar la influencia de una temporada de Educación Deportiva sobre las actitudes hacia la Educación Física (EF) en estudiantes. Los participantes fueron 53 (31 hombres y 22 mujeres;  $M_{edad} = 15.13$ ,  $DT_{edad} = 1.40$ ) estudiantes de secundaria quienes tomaron parte en una intervención de Educación Deportiva de 14 sesiones de 55 minutos. Se adoptó un diseño cuasi-experimental sin grupo control y medidas pre-test y post-test. Los resultados del MANOVA mostraron un aumento significativo en el nivel de valoración de la EF y su profesorado, dificultad de la EF, utilidad de la EF y preferencia por la EF en el alumnado. No hubo efectos multivariantes significativos respecto a la edad, género y deporte extraescolar. Los hallazgos son debatidos subrayando la importancia de la Educación Deportiva en el desarrollo de las actitudes del alumnado hacia la EF como un medio de favorecer su formación integral.

**PALABRAS CLAVE:** práctica basada en modelos, modelos pedagógicos, enseñanza de la Educación Física, dominio actitudinal, currículum y enseñanza.

## 1. INTRODUCTION

One often claimed goal for Physical Education (PE) is student's attitudinal development during the teaching-learning process (SHAPE America– Society of Health and Physical Educators, 2014). Attitudes are conceptualised, from the social psychology field, as a combination of beliefs, feelings and inclinations that influence an individual to act in a specific way. Thus, an individual (e.g. student) makes a global assessment or judgement that is relatively stable and can be positive, neutral or negative, about any aspect of reality (e.g. peers, ideas, things or PE), which is understood as an attitude object (Briñol et al., 2002).

PE educators have conceived attitudes as personal inclinations, ideas, fears and convictions towards PE subject (Aicinena, 1991; Campbell, 1969). In particular, Moreno-Murcia et al. (2003) operationalised attitudes towards PE by dividing them into seven dimensions: perception of PE and the teacher (i.e. importance given by the student to the subject and the teaching staff), difficulty of PE (i.e. complexity of PE compared to the rest of school subjects), usefulness of PE (i.e. validity of the subject contents within the student's comprehensive education), empathy with PE and the teacher (i.e. student's understanding of the situation of the teacher and the subject), agreement with PE organisation (i.e. student's interpretation of the subject's internal structure), preference for PE (i.e. student's interest in PE) and PE as sport (i.e. relationship between sport and school PE).

Previous studies conducted with the aim to improve attitudes towards PE through multi-activity interventions are encouraging, since they reported that it was possible to obtain an improvement in the attitudes shown by the students. More specifically, this research revealed an improvement in attitudes towards PE when the students participated in personalised activities related to strength and conditioning and handling and interpretation of heart rate monitors (Marttinen et al., 2018), in skill circuits in groups (Digelidis et al., 2003), or in problem-solving activities (Gil-Madrona et al., 2016). Likewise, interventions that allowed for choosing activity, using reproductive teaching styles and based on cooperative tasks improved students' attitudes towards PE (Gülay et al., 2010).

Recently, researchers have hypothesised that the promotion of student's attitudinal domain could be approached through Sport Education (SE) (Hastie & Wallhead, 2016). In this regard, SE is a student-centred pedagogical model based on play education (Siedentop, 2002), which essentially aims to teach the curricular sport content in PE class (Siedentop et al., 2020). The main purpose of SE is to provide students with authentic sport experiences within the PE subject. The primary goals of this pedagogical model are to effectively improve student's competence, literacy and enthusiasm related to sport activity. To achieve such goals, students who participate in SE must not only be competent players, but also be able to prove their sport culture by showing that they value, understand and appreciate sport. They must also be able to show enthusiasm towards sport by promoting a positive sport culture (Siedentop et al., 2020).

SE goals are achieved within the frame of meaningful sport experiences when students participate in modified sport seasons, which are of longer duration than traditional PE units (Siedentop, 2002; Siedentop et al., 2020).

Regular competition, which generally requires that all teams compete in modified games or situations, serve as base to these seasons. To ensure a strong team-belonging feeling, students remain in the same teams for the whole season. With the aim to make every season authentic and festive, students regularly record and publish individual and team statistics, participate in a culminating event and perform other specific roles besides the player role (e.g. coach, referee, strength and conditioning trainer) (Siedentop, 2002; Siedentop et al., 2020).

SE seems to be a pedagogical model widely related to the improvement of students' cognitive, physical-motor and attitudinal domain during the sport teaching-learning process that occurs in PE class (Araujo et al., 2014; Evangelio et al., 2018; Hastie et al., 2011). In relation to cognitive domain, previous research has suggested that one SE season improved the internalisation by students of the structural features that define this models-based practice (Burgueño et al., 2020). Nevertheless, Wahl-Alexander et al. (2017) reported the need of conducting several consecutive SE seasons in order for students to consolidate the role internalisation, to gain deeper knowledge on this pedagogical model and to develop their sense of fair play. In line with this, participating in one SE season has led to gaining knowledge related to physical fitness (Ward et al., 2017) or sport rules (Ginciene & Matthiesen, 2017; Mahedero et al., 2015), regardless of the student's gender and skill level (Pereira et al., 2016). In particular, Farias et al. (2017) highlighted the existence of knowledge exchange between the more skilled students and the less skilled ones when pursuing team goals of inclusive nature. Furthermore, one SE season fostered students' decision-making process both in reduced playing situations and standard competition (Mahedero et al., 2015).

In regard to physical-motor domain associated with the teaching-learning process in PE class, one SE season has improved the physical fitness level in secondary school students (Ward et al., 2017), as well as aerobic fitness in university students (Wahl-Alexander & Chomentowski, 2018). Besides, some studies have shown the improvement of the students' level of perceived competence after one SE season (Burgueño et al., 2018; Cuevas et al., 2015; Mesquita et al., 2016). In the same vein, Mahedero et al. (2015) discovered an increase in playing performance of secondary school students after one SE season, while Pereira et al. (2015) reported an increase in technical performance in shot put, hurdle race and long jump. Nevertheless, Hastie et al. (2017) pointed out that, in terms of playing effectiveness, less skilled students were at a disadvantage when they participated together with more skilled ones. This was especially obvious among females. By contrast, previous research has shown technical and tactical improvement, as well as increased engagement to playing after three consecutive seasons based on SE (Farias et al., 2019).

Regarding attitudinal domain in PE class, previous studies have agreed on the increased level of students' engagement and commitment to playing after SE implementation (Calderón et al., 2013; Farias et al., 2018). In particular,

Méndez-Giménez et al. (2016) found that, regardless of the student's skill level, the use of self-built material fostered student's engagement and commitment compared to using traditional material in situations based on SE. In the same vein, Layne and Hastie (2016) reported that students had more fun after one SE season, while Chu and Zhang (2018) and Martínez de Ojeda et al. (2021) found increased intrinsic motivation in students. Moreover, one SE season promoted the development of more ethical behaviour of students measured through responsibility, inclusion and fair play (Harvey et al., 2014; Wahl-Alexander et al., 2017), and also fostered respect for the opponents, rules and referees (Méndez-Giménez et al., 2015).

Nevertheless, up till now, no studies have been found to address the influence of SE on students' attitudes towards PE, despite its relevance in fostering students' engagement to PE class, promoting after-school sport activity and consolidating an active lifestyle at later ages (Gonzalez-Cutre et al., 2014; Sicilia et al., 2015). In this regard, PE educators deem attitudes towards PE an appropriate means to improve and refine pedagogical model scaffolding with the purpose to maximise students' cognitive, physical-motor, socio-emotional and attitudinal learning during PE class and therefore, to improve their comprehensive education (Siedentop, 2002).

Consequently, the objective of this study was to analyse the influence of SE on attitudes towards PE in compulsory secondary school students during the sport learning-teaching process that occurs in PE. This study hypothesised that an intervention based on SE would lead to significant improvements in the perception of PE, difficulty of PE, usefulness of PE, empathy with the teacher, agreement, preference for PE and PE as sport, between the beginning and end of the intervention programme.

## 2. METHOD

### 2.1. Participants

53 students (31 male and 22 female) aged between 13 and 18 ( $M_{age} = 15.13$ ,  $SD_{age} = 1.40$ ) from fourth year of compulsory secondary education of a public school in the south-east of Spain participated in this study. From all participants, 37 (69.81%) students reported to practise after-school sport between 1.50 and 22.00 hours per week ( $M_{frequency} = 4.77$  hours,  $SD_{frequency} = 3.76$  hours). None of the participants stated to have previous experience with SE. Intentional sampling method was applied to select the participants of this study, based on accessibility to the schools involved.

### 2.2. Instruments

**2.2.1. Attitudes towards Physical Education.** The *Attitudes towards Physical Education Questionnaire (Cuestionario de Actitudes hacia la Educación Física)* developed by Moreno-Murcia et al. (2003) was used. It consists of 56 items to assess the perception of PE and the teacher through 11 items (e.g. "I believe the teacher makes an effort to help us improve"), difficulty of PE through 6 items

(e.g. “PE activities are easy”), usefulness of PE through 10 items (e.g. “PE is very important to me”), empathy with the teacher and the subject through 6 items (e.g. “The PE teacher cares about us more than the rest of teachers”), agreement with the subject’s organisation through 5 items (e.g. “I prefer practical to theoretical lessons”), preference for PE and sport through 4 items (e.g. “I prefer doing some sport to watching television”), and PE as sport through 4 items (e.g. “In PE class we only practice sport”). Besides, there are a few neutral items that do not belong to any attitude dimension. The answers to every item were provided on a five-item Likert-type scale, ranging from 1 (*disagree*) to 5 (*totally agree*).

### 2.3. Design and Procedure

In accordance with previous research specialised in SE (Ginciene & Matthiesen, 2017; Layne & Hastie, 2016; Mahedero et al., 2015), this study followed a quasi-experimental design with no-control group and with pre- and post-test measures (Ato et al., 2013). The present research was approved both by the Ethics Committee of the University of Granada and the schools involved. Furthermore, informed consent from every student’s parent or legal guardian was collected. After presenting the intervention programme, the pre-test was conducted. The post-test was performed once the intervention programme was concluded. For both data collections, a questionnaire that guaranteed anonymous and volunteer completion was used. The research team was available to students in order to solve any queries that should arise during this process. Approximate completion time was 20 minutes.

### 2.4. Intervention Programme

**2.4.1. Sport Education Intervention.** The intervention consisted of 14 sessions of 55 minutes, two sessions per week for seven weeks on the usual day and time of the PE class. The intervention duration was in keeping with previous research (Calderón et al., 2013).

The intervention was divided into four phases. The first one was the initial phase, which consisted in an introductory session where every teacher introduced the structural features of this pedagogical model. The students were organised in four teams of five or six players, a specific role was assigned to every member (i.e. coach, strength and conditioning trainer, referee, equipment manager, reporter), they filled in their team card and chose their colour of clothes, shield and motto. The second phase was composed of three teacher-guided practical sessions, where the students were familiarised with the working methodology of this pedagogical model and the technical-tactical fundamentals of the alternative sports involved were addressed. The third phase was composed of seven student-guided practical sessions. In this phase there were two sessions in which the teacher would set several working goals and the coaches would put them into practice, and two sessions in which, besides working on these goals, there was some *Duty team* working time. During this phase, the teacher would provide feedback and encourage the students. The teacher- and student-guided practical sessions were composed of: a) 10-min warm up; b) 40-min main part, containing modified games and a pre-season

tournament; and c) 5-min cool down, including stretching exercises and a group discussion on the previous work. The fourth phase was the final one and was made of three sessions. Two of them consisted in regular competition (league format) and were composed of 10-min warm up, 35 min of competition, 5 min to fill in reports and 5-min cool down. Subsequently, the final event was held in one last session where the ranking of each team was decided and certificates were provided to all students.

**2.4.2. Model Reliability.** The two PE teachers received a 10-hour training course on the theoretical and practical aspects of SE pedagogical model. The research team used the studies by Burgueño et al. (2020) and Gil-Arias et al. (2017) as reference in order to establish the course structure and content. Apart from this training, they were mentored by an SE-expert research team. This mentoring consisted of session analysis, seminars for query and problem solving, and external assessment at the school to confirm that real practice matched the planned content. Such external assessments were conducted by three researchers with experience in SE. They confirmed that the main features of this pedagogical model were followed. To do so, the observational recording sheet designed by Sinelnikov (2009) and adapted to the Spanish context by Calderón et al. (2010) was used.

## 2.5. Statistical Analysis

Data normality was analysed through the standardised coefficients of skewness and kurtosis. These coefficients yielded absolute values under 1.96 for asymmetry and kurtosis (see Table 1), suggesting that the normality assumption could not be rejected (Field, 2017). Descriptive statistics (mean and standard deviation) were calculated for all dependent variables examined. Internal consistency of the dependent variables under study was checked using Cronbach's alpha, which is considered acceptable for values higher than .70 (Viladrich et al., 2017). A multivariate analysis of variance (MANOVA) between the two moments was applied to determine the differences in each of the seven attitudes towards PE along time. The analysis was controlled for age, gender and after-school sport practice. The effect size was calculated through partial eta squared ( $\eta^2_p$ ). An effect size under 0.01 is considered small, under 0.06 is considered medium and large are considered for values higher than 0.14 (Field, 2017). The level of statistical significance is set at  $p > .05$ . The statistical analyses were conducted using the *Statistical Package for Social Sciences (IBM SPSS Statistics for Mac, version 25.0; Armonk, NY, USA)*.

## 3. RESULTS

Table 1 shows changes in the mean score of each dependent variable between the pre- and the post-test. Furthermore, Table 1 also presents Cronbach's alpha values obtained for each one of the seven variables. More specifically, these values ranged between .71 and .80 in the pre-test and between .73 and .84 in the post-test, confirming the adequate level of internal consistency level of all

seven dependent variables at the beginning and end of the intervention programme.

**Table I.** Descriptive statistics and internal consistency for each dependent variable at the beginning and end of the Sport Education intervention

	Pre-test					Post-test				
	$\alpha$	<i>M</i>	<i>SD</i>	$\gamma_1$	$\gamma_2$	$\alpha$	<i>M</i>	<i>SD</i>	$\gamma_1$	$\gamma_2$
Perception of PE	.73	2.83	0.44	0.16	0.17	.78	3.85	0.45	0.11	0.76
Difficulty of PE	.71	2.71	0.60	0.49	0.77	.73	2.91	0.61	0.37	0.28
Usefulness of PE	.78	1.81	0.35	1.26	1.37	.74	3.62	0.32	0.51	0.25
Empathy with the teacher	.80	2.35	0.70	0.02	0.54	.82	2.27	0.73	0.14	0.93
Agreement	.71	3.27	0.60	0.65	0.14	.74	3.22	0.53	0.53	0.62
Preference for PE	.72	2.08	0.63	0.49	0.02	.77	2.25	0.68	0.42	0.49
PE as sport	.79	2.36	0.75	0.46	0.52	.76	2.32	0.77	0.30	0.99

Note: PE = Physical Education;  $\alpha$  = Cronbach's alpha;  $\gamma_1$  = Standardised coefficient of skewness;  $\gamma_2$  = Standardised coefficient of kurtosis.

The MANOVA results showed a significant multivariate effect between the pre- and post-test for the dependent variables altogether (Wilks'  $\lambda$ : .68;  $F = 2.97$ ;  $p = .012$ ;  $\eta^2_p = 0.32$ ). In particular, a statistically significant increase together with a large effect size were found in perception of PE and usefulness of PE. Moreover, there was a statistically significant increase together with a medium effect size in difficulty of PE and preference for PE between the beginning and end of the SE intervention. By contrast, no significant multivariate effects were observed related to age (Wilks'  $\lambda$ : .96;  $F = 0.28$ ;  $p = .959$ ;  $\eta^2_p = 0.04$ ), after-school sport practice (Wilks'  $\lambda$ : .85;  $F = 1.05$ ;  $p = .413$ ;  $\eta^2_p = 0.15$ ) or gender (Wilks'  $\lambda$ : .97;  $F = 0.22$ ;  $p = .980$ ;  $\eta^2_p = 0.03$ ), used as model's control variables.

**Table II.** Results of the Multivariate Analysis of Variance between the beginning and end of the Sport Education intervention for the complete group and with control variables (age, gender and after-school sport)

Complete group			
	<i>F</i>	<i>p</i>	$\eta^2_p$
Perception of Physical Education	337.58	>.001	0.87
Difficulty of Physical Education	5.95	.018	0.10
Usefulness of Physical Education	1529.01	>.001	0.97
Empathy with the teacher	1.13	.292	0.02
Agreement	0.49	.487	0.01
Preference for Physical Education	4.55	.038	0.08
Physical Education as sport	0.21	.653	0.01
Covariate: Age			
	<i>F</i>	<i>p</i>	$\eta^2_p$
Perception of Physical Education	0.29	.594	0.01
Difficulty of Physical Education	1.23	.272	0.03
Usefulness of Physical Education	0.12	.730	<0.01
Empathy with the teacher	0.02	.891	<0.01
Agreement	0.16	.694	<0.01
Preference for Physical Education	0.44	.513	<0.01
Physical Education as sport	0.78	.381	0.02

Covariate: Gender			
	<i>F</i>	<i>p</i>	$\eta^2_p$
Perception of Physical Education	0.01	.946	<0.01
Difficulty of Physical Education	0.31	.580	0.01
Usefulness of Physical Education	0.12	.734	<0.01
Empathy with the teacher	0.01	.963	<0.01
Agreement	0.17	.679	0.01
Preference for Physical Education	0.32	.575	0.01
Physical Education as sport	0.24	.627	0.01
Covariate: After-school sport			
	<i>F</i>	<i>p</i>	$\eta^2_p$
Perception of Physical Education	1.25	.269	0.03
Difficulty of Physical Education	0.15	.705	<0.01
Usefulness of Physical Education	0.01	.953	<0.01
Empathy with the teacher	0.07	.794	<0.01
Agreement	0.01	.908	<0.01
Preference for Physical Education	2.06	.069	0.08
Physical Education as sport	0.17	.685	<0.01

## 5. DISCUSSION

The objective of this study was to analyse the influence of SE on attitudes towards PE in compulsory secondary school students during the sport learning-teaching process that occurs in PE. The results obtained from this study revealed that one SE season produced statistically significant improvements in the perception of PE and the teacher, difficulty of PE, usefulness of PE and preference for PE in secondary education students.

In line with one of the hypotheses suggested, the results of this research showed a significant improvement in the perception of PE and the teacher after the implementation of a SE season. These findings are somehow in keeping with the study by Mesquita et al. (2014), where students scored positively the PE teacher's performance during the SE season. Possibly, autonomy support, which is a characteristic of this pedagogical model implementation, made the teacher become a guide to the student. Consequently, the student became the centre of not only their own teaching-learning process, but also of that of their teammates, as they worked jointly along the season (Ginciene & Matthiesen, 2017; Mesquita et al., 2014). In this regard, SE largely promoted that students assumed considerable importance, according to their role, in aspects related to organisation and implementation of activities, record keeping, setting of common goals and feedback. In fact, performing certain roles such as coach or referee raised awareness among students about the complexity of being a teacher. Thus, both Mesquita et al. (2014, 2016) and Farias et al. (2017) discovered a lack of leadership in trainers when trying to optimise learning, cohesion, equal opportunities and team performance. This was an obstacle to successful performance of their role especially at the beginning of the season. Similarly, Wahl-Alexander et al. (2017) underlined the complexity of performing the referee role due to the numerous discrepancies regarding their decisions during matches. The student-centred approach proposed for SE requested

students to make certain decisions within the teaching-learning process. This seemed to provide them with a more real perspective of the teacher's work, what could have led to deeper and more responsible assessment of the teacher's role in PE class.

The results obtained in the present study showed a significant increase in the perceived difficulty level of PE after one SE season. A plausible explanation would be that SE provides students with a more authentic and educationally enriching sport experience than the traditional instructive models applied in PE (Araujo et al., 2014), which would probably make them perceive the subject as more complex. Actually, the SE curricular scaffolding demands that the student understands and is able to perform adequate strategies in order to successfully confront the complexity of the sport activity. This can be done by developing technical and tactical skills, performing certain roles within the same team, developing multiple social interactions or solving problems in groups instead of just imitating a motor behaviour in PE class (Hastie & Wallhead, 2016). Additionally, SE format requires that students not only know, but also understand and value the sport rules and traditions, and that they distinguish between good and bad sport behaviour with the aim to improve and protect students' sport culture (Siedentop, 2002). All this could lead to increased difficulty level of SE perceived by the student, since this pedagogical model offers them the opportunity to become complete athletes with the necessary tools to critically analyse sport and, at the same time, commit to change it (Siedentop, 2002; Siedentop et al., 2020).

In accordance with one of the hypotheses suggested, the results obtained from the present study revealed a significant increase in the perceived usefulness of PE among students after one SE season. Likewise, these findings are in keeping with one of the main educational goals proposed by Siedentop (2002), as much as SE was understood as a process through which sport could grow and develop as a humanising influence on citizens' lives. The results suggest that SE is a pedagogical model that has fostered, using sport as curricular content, comprehensive education of boys and girls through authentic sport experiences in an educational environment. Similarly, Calderón et al. (2013) highlighted the importance of SE on the development of students' social and civic competence, learning-to-learn competence, autonomy and personal initiative competence as a means to enhance students' comprehensive education. One possible explanation could be that SE format essentially helps develop skills such as team work, problem solving during team activities and autonomous learning. This occurs mainly during the student-guided practical phase through constant decision making during the activities, promoting the acquisition of technical and tactical knowledge, as well as the internalisation of values related to sport culture (Siedentop, 2002).

The findings of this study revealed a significant improvement in the students' level of preference for PE, supporting one of the hypotheses proposed in this research. These results are in line with previous studies (Calderón et al., 2013; Farias et al., 2017; Mesquita et al., 2014) that showed the students' preference for SE when approaching the teaching-learning process in PE class. In particular, Mesquita et al. (2014) reported increased joy among students when

starting the PE class during the SE season since they preferred working in small groups and having some freedom as regards activity organisation. Moreover, Calderón et al. (2013) explained that students, despite being taught using a different pedagogical model, kept the pedagogical inertia from SE, i.e. using the same groups, class organisation and roles performed during the SE season. These findings are in keeping with previous research (Farias et al., 2018; Méndez-Giménez et al., 2016), as they pointed out students' greater commitment and engagement during the activities. Students may have perceived the learning process to be more applied to real sport context through more responsible and significant work, greater interest in the training-competing format, as well as greater knowledge of the sport and its rules under the SE conditions (Calderón et al., 2013; Farias et al., 2017). Furthermore, students' increased fitness level (Wahl-Alexander & Chomentowski, 2018; Ward et al., 2017), together with their increased competence (Cuevas et al., 2015; Mesquita et al., 2016) and enjoyment (Layne & Hastie, 2016) after one SE season may have aroused students' interest in sport activity in the school environment.

Although the results of the present research represent progress in the understanding of SE curricular scaffolding related to the development of attitudinal domain among PE students, a number of limitations must be considered. The intentional sampling technique, the small number of participants, as well as their wide age range and the lack of control group make it necessary to interpret the results very carefully, avoiding generalisation. Therefore, further studies are needed in order to confirm or discuss the findings from this research. The present research was conducted with compulsory secondary education students, so the effects of this pedagogical model on attitudes towards PE in students of other educational levels are unknown. Thus, future studies should examine the influence of SE on attitudes towards PE in primary school, upper secondary school or university students. This work has focused on alternative sports as curricular content related to sport, so future research could analyse whether more conventional sports or introductory sport games could affect students' attitudes towards PE using the SE format. In the present study, measurements were only taken at the beginning and end of the SE intervention, limiting the inspection of the effect of this pedagogical model on attitudes towards PE. Consequently, future studies should examine the potential effect of SE on each of the phases proposed for this model, with the aim to gain deeper knowledge on how attitudinal changes towards PE occur.

## **6. CONCLUSIONS**

The findings obtained in this study revealed a significant increase in four of the seven attitudes towards PE (i.e. perception of PE and the teacher, difficulty of PE, usefulness of PE and preference for PE) outlined by Moreno-Murcia et al. (2003) after one SE season in the sample analysed. These results suggest that SE could be an appropriate pedagogical model for PE teachers to meet the curricular demands of the secondary school students involved in this study related to their attitudinal domain development in PE class and, therefore, to foster their comprehensive education (SHAPE America, 2014). Furthermore, the PE teachers who participated in this study should consider using SE as a pedagogical model with the ability to promote in secondary education students

the necessary skills to emit positive and stable judgements related to PE attitudinal aspects. By doing so, they would contribute, on one hand, to students' attitudinal domain and, on the other, to their comprehensive education from PE.

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