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ORIGINAL

MOTIVATIONAL AND SOCIAL EFFECTS OF A MULTIANNUAL SPORT EDUCATION PROGRAM

EFFECTOS MOTIVACIONALES Y SOCIALES DE UN PROGRAMA PLURIANUAL DE EDUCACIÓN DEPORTIVA

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ABSTRACT

The effects of a progressive and multiannual program of Sport Education (SE) on the motivational regulations, basic needs (including novelty), social goals, and intercultural sensitivity of elementary students were analyzed. A quasi-experimental design was carried out with two conditions (SE vs traditional model). 250 students from four schools in Murcia participated ($M = 10.80$ years, $SD = 1.09$). Students of the SE program ($N = 73$) progressively received teaching units from grades 2 to 6, while students from three other centers ($N = 177$) received a traditional methodology (short units). The comparative analysis (U of Mann-Whitney) showed advantages in favor of the SE condition in intrinsic

motivation (women), identified regulation (6th grade), competence (total sample, 6th and 4th grades, male and native), relatedness (5^o course), novelty, and intercultural sensitivity (positive emotional responses). However, they showed disadvantages in terms of amotivation in men. The results are discussed and practical implications are provided.

KEY WORDS: physical education, pedagogical models, social goals, motivation, inclusion.

RESUMEN

Se analizaron los efectos de un programa progresivo y plurianual de Educación Deportiva (ED) sobre las regulaciones motivacionales, necesidades básicas (incluyendo novedad), metas sociales, y sensibilidad intercultural de estudiantes de Educación Primaria. Se realizó un diseño cuasi-experimental con dos condiciones (ED vs Modelo tradicional). Participaron 250 estudiantes de cuatro centros escolares de Murcia ($M = 10.80$ años; $DT = 1.09$). Los estudiantes del programa de ED ($N = 73$) recibieron progresivamente temporadas de 2^o a 6^o, mientras los estudiantes de otros tres centros ($N = 177$) recibieron una metodología tradicional (unidades cortas). Los análisis comparativos (U de Mann-Whitney) mostraron ventajas a favor de la condición-ED en motivación intrínseca (mujeres), regulación identificada (6^o curso), competencia (muestra total, 6^o y 4^o cursos, varones y autóctonos), relación (5^o curso), novedad, y sensibilidad intercultural (respuestas emocionales positivas). Sin embargo, mostraron desventajas en cuanto a desmotivación en los varones. Se discuten los resultados y se aportan implicaciones prácticas.

PALABRAS CLAVE: educación física, modelos pedagógicos, metas sociales, motivación, inclusión.

INTRODUCTION

Self Determination Theory (SDT; Deci & Ryan, 2000) is a preponderant theoretical framework that tries to explain student's motivation. It postulates that the individual can be intrinsically motivated (is motivated by the enthusiasm that comes from achieving the task itself), extrinsically motivated (motivated by external reinforcement) or amotivated (absence of motivation). In addition, the extrinsic motivation relies on a series of intermediate regulations from the external (less self-determined) to the integrated (more self-determined) regulation, passing through the introjected and identified regulation. A second postulate of the SDT establishes that there are three basic psychological needs (BPN, competence, autonomy, and social relatedness) that propitiates that students can be self-determined, that is, intrinsically motivated. Deci and Ryan (2000, p. 229) define them as *innate psychological nutriments that are essential for ongoing psychological growth, integrity, and well-being*. Competence refers to the student's ability to solve problems effectively; autonomy refers to the student's ability to perform tasks independently; social relatedness refers to the ability to relate to their peers, regardless of gender or origin.

Traditionally, motivational studies have neglected social aspects and ignored the desire to maintain social relationships as a goal of action that supports behavior (Elliot, Gable, & Mapes, 2006). However, it is very likely that student's behavior and academic success is conditioned both by motivational and social factors, among which the persecution of social goals stands out (Cecchini, González, Méndez-Giménez, & Fernández-Río, 2011; Elliot et al., 2006, Méndez-Giménez, Cecchini, & Fernández-Río, 2018). Several goals have been established in the social domain, such as relationship and social responsibility (Guan, McBride, & Xiang, 2006). Social relations goals refer to the student's desire to form and maintain positive relationships with schoolmates, while social responsibility goals reflect the student's desire to follow social rules and expectations of class roles (Guan et al., 2006; Wentzel, 1991). Previous research has shown positive relationships between social responsibility goals and classroom involvement (Garn, McCaughtry, Shen, Martin, & Fahlman, 2011), positive academic outcomes (Wentzel, 1991), psychological well-being, effort/persistence of students (Guan, Xiang, McBride, & Bruene, 2006), as well as an inverse relationship with disruptive behaviors of students (Garn et al., 2011). The joint analysis of both factors (motivational and social) gained prominence in the present study.

The pedagogical models have aroused great interest among professionals and researchers (Fernández-Río, Calderón, Alcalá, Pérez-Pueyo, & Aznar, 2016). A pedagogical model is understood as the plan or pattern that can be used to shape the curriculum, design subjects and guide instruction in the classroom and other contexts. Metzler (2017) pointed out a series of teaching models in the area of Physical Education (PE), among which, Sport Education (SE) model is one of the most studied in recent years (Hastie, Sinelnikov, Wallhead, & Layne, 2014; Siedentop, 1994). The SE model was defined as a model that allows students to live authentic sports experiences and pursues three fundamental objectives: students are competent, enthusiastic and literate about sports (Siedentop, 1994). Numerous empirical studies have reported improvements in these objectives (see reviews by Hastie, Martínez de Ojeda, & Calderón, 2011, Wallhead, & O'Sullivan, 2005). Compared to the traditional methodology (TM), based on short units, teacher leadership and direct instruction), SE instruction is organized by units or long periods (12-16 sessions), small, heterogeneous and stable teams during the unit, using rotating roles (giving responsibility to the student), systematic records, and final events in a festive context (Siedentop, Hastie, & van der Mars, 2011).

Evidence has shown SE model as a methodological proposal which promotes the intrinsic motivation improvement, in accordance with the principles of the SDT and the three BPN that define it (Hastie, & Wallhead, 2016; Chu, & Zhang, 2018). These postulates have been tested with high school students (Puente-Maxera, Méndez-Giménez, Martínez de Ojeda, & Liarte, 2018) and in research compared with the MT, obtaining positive results for the SE model (Cuevas, García-López, & Contreras, 2015, Fernández-Río, Méndez-Giménez, & Méndez-Alonso, 2017, Medina-Casaubón, & Burgueño, 2017, Perlman, 2011, Spittle, & Byrne, 2009). Likewise, advantages have been reported with amotivated students when the SE model is applied with respect to the TM

(Perlman, 2010). On the other hand, the effect of the SE model on BPN has also been explored. Thus, Méndez-Giménez, Fernández-Río, and Méndez-Alonso (2015), and Méndez-Giménez, Martínez de Ojeda, and Valverde (2017), comparing the SE model and the TM, with high school and 6th grade of Primary Education (PE) students respectively, reported significant improvements in BPN higher than those found in the control group.

Positive results in the motivational variables when the SE model is applied have been explained by the feeling of affiliation and the relationships established between equals (Perlman, 2011), the autonomy that occurs when the students acquire responsibilities inherent to the activity what they do (Perlman, & Goc Karp, 2010) and the novelty effect derived from the first experiences with the model (Calderón, Hastie, & Martínez de Ojeda, 2010). At the same time, some studies have delved into the effects of the SE model longitudinally. Sinelnikov and Hastie (2010), using autobiographical memory techniques with 15-year-old students, pointed out that the characteristics of affiliation, authentic competence and perceived learning that students find so attractive, extend beyond the initial exposure to the model. Martínez de Ojeda, Méndez-Giménez and Valverde (2016) evaluated, over three consecutive seasons, the effects of the SE model on the social climate of the classroom, the perceived competence and the intention to be physically active in PE students. They reported high levels in the different variables.

Regarding social factors, Méndez-Giménez et al. (2015) found significant improvements in friendship goals and BPN among high school students. Similarly, several studies have addressed the potential of the SE model on interculturality. Méndez-Giménez, Puente-Maxera, and Martínez de Ojeda (2017) showed improvements in intercultural competence (positive emotional response, help, and peer relations) in a didactic unit of *mime*. Puente-Maxera, Méndez-Giménez and Martínez de Ojeda (2018) examined the impact of a season of *ultimate* on the intercultural behavior and sensitivity of 6th grade PE students in a group of high cultural diversity. The results showed the model as favoring the integration of students regardless of their characteristics. Finally, Puente-Maxera, Méndez-Giménez, and Martínez de Ojeda (2017) pointed out certain improvements in intercultural sensitivity derived from the rotation of roles. They also perceived an increase in friendship relationships between participants from different backgrounds, regardless of whether the roles of students in each team were rotated or not.

Despite this background, to date, there have been no reports of multiannual studies (an entire educational stage or several consecutive school years) which have explored the motivational and social impact on students when applying the SE model in PE. Therefore, this study analyzed the effects of the SE model on motivational regulations, the satisfaction of BPNs (including novelty), social goals, and intercultural sensitivity of PE students. During five school years (from 2nd to the 6th), most of the units with this pedagogical model were implemented in a school and these results were compared with those of three other schools in which TM was used. For greater depth, sociodemographic variables were considered as course, gender, and origin (immigrant and native students).

Based on the scientific evidence from the literature, it was predicted that significant differences would be obtained in the intrinsic motivation and the identified regulation in favor of the SE model, accompanied by significant differences in external regulation, as well as in amotivation, in this case with higher values in the schools in which the TM was applied (hypothesis 1). It was also expected to obtain significant differences in favor of the SE model in BPN (hypothesis 2), social goals in PE (hypothesis 3) and intercultural sensitivity (hypothesis 4).

MATERIAL AND METHODS

Design

The current study used a quasi-experimental control group (Sport Education vs. Traditional model). The four schools were chosen using a nonprobabilistic and convenience method, supported by the school administrators and teachers' willingness to participate.

Participants and intervention programs

250 students (Table 1), mean age 10.80 years ($SD = 1.09$), from four state schools in Region of Murcia (Spain) took part in this study. In the experimental school, SE model was taught by two teachers: one of them was an expert using the model and had 13 years of teaching experience (four applying SE) by the start of the study; the other teacher was a novice in relation to SE, with eight years of teaching experience. Both teachers held regular meetings (once a month) for planning the teaching units. Before starting the intervention, the expert teacher trained the novice one through guided readings about SE, video analysis, and training talks about SE key features. Furthermore, the expert teacher supervised the initial applications of the SE. Students' families were informed and signed an informed-consent document. Likewise, the investigation was authorized by all the involved schools.

Table 1. Participants according to treatment, school, grade, gender and nationality

		4 th				5 th				6 th				School	Total
		Gender		Nation.		Gender		Nation.		Gender		Nation.			
		M	F	S	I	M	F	S	I	M	F	S	I		
SE	School 1	18	12	10	20	7	6	5	8	15	15	16	14	73	73
	School 2	6	8	10	4	9	6	9	6	10	9	14	5	48	
TM	School 3	10	10	20	0	12	11	20	3	12	12	23	1	67	177
	School 4	10	11	13	8	11	9	8	12	14	7	12	9	62	
	Total	44	41	53	32	39	32	42	29	51	43	65	29	250	250

SE = Sport education; TM = Traditional model; M = Male; F = Female; S = Spanish; I = Immigrant

Sport Education model. The application of the SE model was gradually increased throughout the five school grades (from 2nd to 6th). Consequently, in 2nd grade it was implemented one teaching unit or season; in 3rd grade, two; in 4th grade, three; and in 5th and 6th grades, five units. Altogether, by the end of the study, the PE curriculum had included 16 seasons for 6th grade, 11 for 5th

grade, and 6 for 4th grade. Units (Table 2) vary between 10 and 15 sixty-minute lessons. All of them follow the methodological requirements in relation to the model's features and phases. Contents included in each grade were the following: 2nd: *Five passes* game. 3rd Pre-sports like *balón torre*, dodgeball, and *pichi*. 4th: Pre-sports and one unit of mini-handball initiation. 5th and 6th: two units of team sports initiation, one season of individual sport, one unit of alternative games, and one unit of body expression.

Traditional model. Units taught using TM (Table 2) were shorter, lasting between 4 and 6 sixty-minute lessons. In total, around 9-12 units were applied in every grade. There included the following contents: 2nd: contents related to body schemes, body expression, balance, and general dynamic coordination. 3rd and 4th: similar contents to 2nd and pre-sports. 5th and 6th: Physical training, body expression, and sports.

Table 2. Main differences between the teaching models.

	Time	Student role	Competitions	Groups/teams
SE	10 -15 sixty-minute lessons	Students take decisions and responsibilities autonomously.	<i>Fair play</i> is registered. Students act as referee and statisticians.	Teams stay together throughout the entire season. Heterogeneous teams according to gender and nationality. Teams made through "blindly selection".
TM	4-6 sixty-minute lessons	Students follow teacher' instructions.	Teacher referees and oversees matches.	Teams changed throughout the season. Commonly made in consonance with students' preference. Sometimes are directly chosen by some students. They roughly are heterogeneous on gender and nationality, but not in general.

SE = Sport education; TM = Traditional model.

Instruments

Motivational regulations. The Spanish version of the *Perceived Locus of Causality (PLOC) Scale* (Moreno, González-Cutre, & Chillón, 2009) was used. The scale, headed by the phrase "I participate in PE classes...", is composed by 20 items with a five-factor solution: (a) intrinsic motivation (e.g., "Because Physical Education is stimulating"), (b) identified regulation (e.g., "Because I want to improve in sports"), (c) introjected regulation (e.g., "Because I feel guilty when I don't"), (d) external regulation (e.g., "Because that's the rule"), and (e) amotivation (e.g., "But I don't know the reason why"). Responses are collected on a Likert scale from 1 (*very untrue*) to 7 (*very true*).

Basic psychological needs. It was used the PE version of the *Basic Psychological Needs Scale* by Moreno, González-Cutre, Chillón, and Parra (2008). The instrument consists of 12 items distributed in three factors of four items each: autonomy (e.g., "I feel like I have a say in choosing the exercises that I do"), competence (e.g., "I do the exercises effectively"), and relatedness (e.g., "I feel very comfortable with my classmates"). Items vary between 1 (*very untrue*) and 5 (*very true*).

Novelty satisfaction. The need for novelty satisfaction was measured through the *Novelty Need Satisfaction Scale*, developed by González-Cutre, Sicilia, Sierra, Ferriz, and Hagger (2016). The scale is preceded by the heading “In my PE classes...” and is composed by six items (e.g., “I feel I do novel things”) ranging from 1 (*totally disagree*) to 5 (*totally agree*).

Social goals. It was employed the *Social Goal Scale*, adjusted to PE context by Guan, McBride et al. (2006) and validated in the Spanish context by Moreno, González-Cutre, and Sicilia (2007). The scale is composed of 11 items divided into two dimensions: *relationship* (6 items; e.g., “I would like to really know my school friends”) and *responsibility* (5 items; e.g., “I try to do what the teacher asks me to do”), collected on a Likert scale from 1 (*totally agree*) to 7 (*totally disagree*).

Intercultural sensibility. The Intercultural Sensibility Scale (Sanhueza & Cardona, 2008) was used. The instrument is composed of 10 items distributed in two factors: *positive emotional response* (PER, 7 items) and *negative emotional response* (NER, 3 items). Items vary between 1 (*never*) and 4 (*always*).

Data analysis

Information was analyzed using the statistical software IBM-SPSS (version 23.0, registered trademark). With respect to internal consistency, Table 3 shows Cronbach’s alpha for each analyzed scale. Given the poor reliability found in some of the dimensions (need for autonomy, $\alpha = .58$ and introjected regulation, $\alpha = .48$), corresponding values were dismissed. Those variables whose values were close to acceptance level ($\alpha \geq .70$) were included for subsequent analysis, given the early age of the students and the interest it entailed for the study.

Descriptive and inferential statistics techniques were employed. Normality of collected data was violated. Therefore, in order to verify the intervention effects, comparisons between treatments were performed using the Mann-Whitney *U* test. Sociodemographic variables (gender, grade, and nationality) were also considered for analysis. The significance level was set in $p < .05$.

RESULTS

Table 3 reflects descriptive statistics (means and standard deviations) for each of the analyzed variables according to the teaching model, gender, grade, and nationality. In relation to the motivational regulations, the highest values (in both conditions) are obtained in identified regulation, followed by intrinsic motivation; whereas lowest values are found in amotivation. Basic psychological needs scores are high (more than 4 over 5). However, novelty punctuations remain at those levels only in SE treatment. Social goals scores (relationship and responsibility) are close to maximum values (around 6.4 over 7). Finally, with respect to intercultural sensibility, positive emotional responses were high (above 3 over 4), whereas negative responses were low in both treatments.

Table 3. Internal reliability and descriptive statistics for each of the variables according to total sample, grade, gender, and nationality.

Variables	Rank	α	SE		TM	
			M	SD	M	SD
Intrinsic Motivation						
N total	1-7	.71	6.38	.96	6.16	1.13
4º PE			6.24	1.23	5.88	1.45
5º PE			6.57	.67	6.30	1.01
6º PE			6.44	.73	6.17	1.05
Male			6.16	1.15	6.18	1.13
Female			6.66*	.56	6.13	1.13
Spanish			6.53	.79	6.19	1.13
Immigrants			6.27	1.07	6.06	1.13
Identified regulation						
N total	1-7	.83	6.56	.87	6.33	1.00
4º PE			6.23	1.21	6.08	1.26
5º PE			6.76	.51	6.62	.69
6º PE			6.81**	.35	6.25	1.00
Male			6.51	1.06	6.39	1.00
Female			6.62	.59	6.26	1.00
Spanish			6.62	.63	6.34	.99
Immigrants			6.52	1.02	6.31	1.02
External regulation						
N total	1-7	.68	5.17	1.59	4.87	1.53
4º PE			5.11	1.57	4.93	1.68
5º PE			5.38	1.19	5.00	1.58
6º PE			5.15	1.80	4.72	1.40
Male			5.44	1.57	5.12	1.54
Female			4.85	1.57	4.56	1.47
Spanish			5.19	1.82	4.87	1.56
Immigrants			5.17	1.42	4.86	1.43
Amotivation						
N total	1-7	.71	3.19	1.74	2.96	1.78
4º PE			3.56	1.91	2.84	1.88
5º PE			2.65	1.08	3.52	1.78
6º PE			3.03	1.73	2.60	1.63
Male			3.79*	1.77	3.08	1.76
Female			2.54	1.47	2.80	1.80
Spanish			2.86	1.71	2.74	1.77
Immigrants			3.44	1.75	3.67	1.61
Competence						
N total	1-5	.67	4.48**	.60	4.23	.69
4º PE			4.37*	.76	4.08	.76
5º PE			4.55	.48	4.41	.62
6º PE			4.57**	.43	4.20	.65
Male			4.42*	.70	4.15	.75
Female			4.57	.44	4.32	.60
Spanish			4.58**	.44	4.20	.72
Immigrants			4.41	.69	4.32	.58
Relatedness						
N total	1-5	.76	4.44	.80	4.32	.78

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4º PE			4.25	.85	4.24	.91
5º PE			4.88**	.28	4.41	.74
6º PE			4.42	.85	4.31	.68
Male			4.49	.72	4.28	.78
Female			4.37	.90	4.36	.77
Spanish			4.40	.87	4.29	.83
Immigrants			4.46	.75	4.39	.62
Novelty						
N total	1-5	.75	4.22***	.65	3.73	.80
4º PE			3.98*	.72	3.50	.89
5º PE			4.79***	.34	4.07	.68
6º PE			4.22**	.52	3.65	.72
Male			4.12*	.73	3.74	.82
Female			4.33***	.53	3.71	.77
Spanish			4.25***	.60	3.66	.80
Immigrants			4.19	.69	3.88	.78
SGS – Relationship						
N total	1-7	.73	6.43	.82	6.41	.78
4º PE			6.22	1.06	6.32	.93
5º PE			6.67	.68	6.53	.69
6º PE			6.55	.51	6.38	.71
Male			6.30	1.00	6.27	.93
Female			6.60	.47	6.58	.50
Spanish			6.41	.61	6.43	.83
Immigrants			6.45	.95	6.37	.62
SGS – Responsibility						
N total	1-7	.67	6.36	.89	6.30	.91
4º PE			6.30	1.15	6.05	1.29
5º PE			6.52	.68	6.42	.70
6º PE			6.36	.67	6.39	.62
Male			6.23	1.05	6.12	1.08
Female			6.53	.63	6.49	.62
Spanish			6.38	.69	6.31	.97
Immigrants			6.36	1.02	6.25	.71
Positive Emotional Response						
N total	1-4	.77	3.51	.51	3.41	.70
4º PE			3.24	.57	3.32	.78
5º PE			3.68	.35	3.53	.66
6º PE			3.68*	.41	3.37	.68
Male			3.50	.50	3.34	.72
Female			3.53	.53	3.50	.66
Spanish			3.44	.55	3.41	.71
Immigrants			3.56	.49	3.44	.66
Negative Emotional Response						
N total	1-4	.65	1.81	.66	1.97	.88
4º PE			2.06	.64	1.95	.84
5º PE			1.51*	.56	2.20	.90
6º PE			1.66	.65	1.77	.84
Male			1.89	.69	2.01	.94
Female			1.70	.62	1.91	.80
Spanish			1.68	.64	1.89	..78

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Immigrants 1.90 .67 2.21 1.11

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. SE = Sport education; TM = Traditional model; PE = Primary Education

Table 4 shows results obtained from Mann-Whitney U tests comparing both assigned treatments (SE vs. TM) and grouping data according to grade, gender, and nationality. In relation to the motivational regulations, significant differences were found in intrinsic motivation (girls), identified regulation (6th grade) and amotivation (boys), reporting higher scores in the SE group. Regarding basic psychological needs, significant differences were obtained in the need for competence (total sample, 6th and 4th grades, boys and Spanish), relatedness (5th grade) and novelty (all the variables except for immigrants), informing higher scores in the SE group in all the variables. With respect to social goals, no significant differences were found in any of the treatments. Finally, in relation to the intercultural sensibility, comparisons showed significant differences in PER (4th grade) in favour of SE group, and in NER, with lower scores for students taught by SE model.

Table 4. Z-scores and bilateral asymptotic significance (*Bil. A. Sig.*) of the Mann-Whitney U test in SE vs. TM comparisons

	N total	4 th	5 th	6 th	Male	Female	Spanish
Intrinsic							
Mann-Whitney U						668.000	
Z						-2.396	
<i>Bil. A. Sig.</i>						.017	
Identified							
Mann-Whitney U				564.500			
Z				-3.149			
<i>Bil. A. Sig.</i>				.002			
Amotivation							
Mann-Whitney U					971.000		
Z					-1.996		
<i>Bil. A. Sig.</i>					.046		
Competence							
Mann-Whitney U	4500.500	541.000		569.000	1310.500		1259.000
Z	-2.918	-2.120		-2.675	-2.226		-2.853
<i>Bil. A. Sig.</i>	.004	.034		.007	.026		.004
Relatedness							
Mann-Whitney U			192.000				
Z			-2.709				
<i>Bil. A. Sig.</i>			.007				
Novelty							
Mann-Whitney U	3293.000	469.000	93.000	437.500	1131.500	557.500	868.500
Z	-4.385	-2.393	-3.492	-3.461	-2.495	-3.756	-3.684
<i>Bil. A. Sig.</i>	.000	.017	.000	.001	.013	.000	.000
Positive emotional response							
Mann-Whitney U				611.000			
Z				-1.988			
<i>Bil. A. Sig.</i>				.047			
Negative emotional response							
Mann-Whitney U			172.500				

Z	-2.360
Bil. A. Sig.	.018

Note: Z = test statistic.

DISCUSSION

The main objective of the study was to analyze the effects of an SE multiannual program on student's motivational regulations, BPN (including novelty), social goals (responsibility and relationship), and intercultural sensitivity (positive and negative emotional responses) in the PE context. To do this, two conditions were compared (SE vs. TM) from the data collected in four schools, one in which the majority of the units were implemented by SE and three, in which a TM was used.

First, it was found that the levels of self-determined motivation (intrinsic and identified regulation) between students of both conditions were very high, while the amotivation rate was low. These data are consistent with the high scores of BPN satisfaction, which is convergent with the postulates of the SDT (Deci & Ryan, 2000). Research has shown that higher BPN satisfaction is related to more self-determined motivation, both in sport and in PE settings (Standage, Duda, & Ntoumanis, 2006). High values of relationship and responsibility goals show the importance of social aspects in childhood and preadolescence (Elliot et al., 2006, Wentzel, 1991). Regarding intercultural sensitivity, positive emotional responses were high for both levels of treatment, while the negative ones were low, confirming that a certain inclusive message permeates the educational context independently of the methodological approach. In sum, taking these data as a whole, it could be inferred that the students from the four chosen schools received a quality PE, which focused appropriately on the motivational and social dimensions.

In relation to hypothesis 1, centered on the supposed motivational advantages of the SE-condition, the results of this study only allow for a partial confirmation of their assumptions. Significant differences were found in intrinsic motivation (girls), identified regulation (6th year of PE) and amotivation (boys), with higher scores in the SE-condition. Consequently, the prolonged use of the SE model in PE seems to provoke more self-determined motivation among girls and older students. These results converge with those obtained by the literature (e.g, Burgueño, Medina-Casabón, Morales-Ortiz, Cueto-Martín, & Sánchez-Gallardo, 2017, with high school students). The SE model is relatively consistent in the promotion of motivational results between genders, courses, sports and motivational profiles (Chu & Zhang, 2018) when applied in a timely manner. However, in the actual research, no differences were found regarding external regulation between conditions. In addition, the prolonged exposure to the SE model in PE seems to have exerted an amotivating role in the male collective. This result could be due to the influence of extracurricular sports activities, of an eminently competitive nature, in which most of the boys in the study were participating (soccer or futsal). This contrast between the paradigm of extracurricular sports and that offered in the media compared to that promoted in the SE model (where fair play and the development of values were pondered during the competition phase), could provoke a motivational conflict

between boys and unleash an amotivating effect. On the other hand, girls mainly were participating in activities of expressive and non-competitive scope (dance or rhythmic gymnastics), so this approach did not contradict their personal motivations. Future studies should clarify whether this increase in boy amotivation is effectively due to this prolonged exposure to the SE model in PE or if it is more related to motivational fall in the adolescent age group (eg, Barkoukis, Taylor, Chanal, & Ntoumanis, 2014).

The results confirm hypothesis 2, which predicted higher scores on student's BPN satisfaction and novelty in the SE-condition. Significant differences were obtained in the need for competence (total sample, 6th and 4th grades, boys and native), relatedness with the others (5th year) and novelty (all variables except immigrants), with SE model scores being higher in all of these categories. The results are consistent with those reported by the literature directed to specific seasons in SE (e.g., Cuevas et al., 2015, Méndez-Giménez et al., 2015). Numerous studies have emphasized the benefits of the SE model for the development of social relationships among peers (Penney, Clarke, & Kinchin, 2002). This fact is fundamentally related to the assignment of responsibilities that causes greater interactions between students (Carlson, 1995, Hastie, 2000). On the other hand, studies with a single SE season also indicate that the SE model causes a novelty effect between students and the teacher (Calderón et al., 2010). The recent longitudinal study (Martínez de Ojeda & Méndez-Giménez, 2017), in which three consecutive seasons were implemented with the SE model, observed that as the program progressed, it could have caused a plateau in the enthusiasm for the loss of that novelty effect. However, this does not seem to be the case of the participants in the present research, who showed very high levels of satisfaction of this need at the end of the study.

Regarding hypothesis 3, the results did not find significant differences in favor of any of the conditions in social goals variables (goals of social responsibility and relationship). Both conditions developed equal contexts that helped to set social goals among students. The explanation for this phenomenon may be due to the high levels of social relationship and responsibility goals reported by the participants of both conditions. However, the absence of pretest measures in this work does not allow us to clarify this question. Future experimental studies could shed light in this regard.

Finally, the results allowed us to corroborate hypothesis 4 regarding intercultural sensitivity. On the one hand, the positive emotional response scores were significantly higher in the SE-condition. These findings are in line with those of Puente-Maxera et al. (2018) in which the SE model was pointed out as a facilitator of students' integration and inclusion, independently of their individual characteristics. The positive effects of the model in this sense may be due to the creation of heterogeneous groups and the need to collaborate together promoting support among the members of the teams (Martínez de Ojeda & Méndez-Giménez, 2017). On the other hand, the negative emotional response scores were significantly lower in the SE-condition than in the TM-condition. These results are aligned with the previous ones and give new support to the use of the SE model for the development of intercultural sensitivity.

Our findings suggest the need for a methodological turnaround in PE teachers who wish to use the SE model throughout the PE stage. This change would affect both the programming and leadership tasks during the sessions, as well as the selection and distribution of contents. In the first place, the programming should be redistributed so that the curricular elements are present in a smaller number of training units or seasons. Second, protocols should be established to determine the tasks and demands of the SE model and organize them accordingly according to the difficulty assumed by students of each school year. In this sense, protocols for teaching the roles of students in higher grades to those in lower grades could be established. Finally, it is suggested to coincide the final events with highlights in the school life.

The results of this study should be taken with caution since it presents a number of limitations. On the one hand, it is a quasi-experimental (lacking pretest measurements) and transversal design (a single data collection at the end of the study). On the other hand, the low reliability in some variables. In the future, longitudinal investigations should be undertaken that contemplate several cycles or educational stages and collect data at different moments in the process. Also, it would be interesting to carry out longitudinal studies in different types of schools (rural, urban) and with different rates of immigrant students.

CONCLUSIONS

This study sheds light on our understanding of the cumulative effect of the SE model in PE from a complementary perspective to the motivational and social factors of children and preadolescents. Support is given to the idea that SE is an effective model that can be used in a prolonged and progressive way in the PE curriculum. However, the model structures should be reviewed, with the focus on unmotivated students. In relation to cultural diversity, the application of the SE model seems to provoke significant improvements in the native students' needs for competence and novelty, effects that do not occur in the immigrant community. These results also justify the need to review and modify the SE model in PE to better serve students from other places of origin.

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