

## Effects of a hybrid teaching model (SEM + TGfU) and the model of personal and social responsibility on sportsmanship and enjoyment in 4<sup>o</sup> Secondary and 1<sup>o</sup> Baccalaureate students

### Efectos de un modelo híbrido de enseñanza (MED + TGfU) y el modelo de responsabilidad personal y social sobre la deportividad y la diversión en estudiantes de 4<sup>o</sup> ESO y 1<sup>o</sup> Bachillerato

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**Abstract.** The application of pedagogical models can have positive effects on sportsmanship and students' enjoyment of Physical Education (PE) lessons. The aim of this study was to compare the influence on sportsmanship and fun of the application of, on the one hand, the combination of the Sports Education Model (SEM) and the Teaching Games for Understanding (TGfU) model and, on the other, the Personal and Social Responsibility Model (PSRM). The participants in this study were a total of 85 Spanish teenagers, 39 girls and 46 boys, studying Secondary Education. They completed the SSI questionnaires adapted to Physical Education (SSI-PE) to analyse their enjoyment, and the Multidimensional Sportsmanship Orientations Scale (MSOS) to analyse sportsmanship. Results showed significant differences in enjoyment when applying both the hybrid model (SEM+TGfU) and the PSRM model ( $p < .01$ ). It is concluded that both interventions with the hybrid model and the PSRM generate positive effects on students' enjoyment.

**Keywords:** methodologies, teaching, learning, physical education, values.

**Resumen.** La aplicación de modelos pedagógicos puede tener efectos positivos sobre la deportividad y la diversión del alumnado en la clases de Educación Física (EF). El objeto de estudio se basó en comparar la influencia de la aplicación de una hibridación del Modelo de Educación Deportiva (MED) y el Modelo Comprensivo (TGfU), y del Modelo de Responsabilidad Personal y Social (MRPS), sobre la deportividad y la diversión. Para ello, participaron un total de 85 estudiantes, 39 chicas (46%) y 46 chicos (54%), de edades comprendidas entre los 16 y 17 años ( $16.42 \pm 0.50$ ). Los participantes de dos grupos de 4<sup>o</sup> ESO y dos de 1<sup>o</sup> BACH, cumplimentaron dos cuestionarios al inicio y al final de la unidad formativa. La versión final española del cuestionario SSI adaptado a la EF (SSI-EF) para analizar la diversión, y la versión española de la Escala Multidimensional de Orientaciones a la Deportividad Multidimensional (MSOS) para analizar la deportividad. Los resultados mostraron diferencias significativas en la diversión percibida al aplicar tanto el modelo híbrido como el MRPS ( $p < .01$ ). Se concluye afirmando que tanto la intervención a través de un modelo híbrido (MED + TGfU) y mediante el MRPS, genera efectos positivos sobre la diversión del alumnado.

**Palabras clave:** metodologías, enseñanza, aprendizaje, educación física, evaluación.

## Introduction

### *Sportsmanship in Physical Education*

Sportsmanship is defined as a concept comprised of five dimensions: full commitment to practice (participation and effort), respect for social conventions (acknowledge the opponent's good actions), respect for the rules and the referees (comply with established rules), respect for the rival (actions such as not taking advantage when the opponent is injured and avoiding

bad treatment to adversaries), and unsportsmanlike conduct (Vallerand, Brière, Blanchard & Provencher, 1997). However, Abad (2010) understands sportsmanship as a multidimensional concept or a multiple reality of five dimensions different from the aforementioned ones: justice (when breaking the rules), equality (when facing actions contrary to the spirit of the game), good forms (such as accepting an infraction by the opponent), the will to win (maximal effort in the field of the game), and equilibrium (between the will to win and the rest of these dimensions).

Shields and Bredemeier (1995) highlight the relevance of sportsmanship for the subject of PE, even though the lack of consensus about its meaning between

the professionals of the field. In this sense, PE teachers make an effort to introduce a spirit of sportsmanship in their lessons, making clear that a positive attitude in games and sports is fed by mutual respect for the value and dignity of each participant (Horrocks, 1980). Thus, sportsmanship is instilled by PE teachers in the classrooms of educational centres through actions such as respecting turn taking in games and participating during a task by making an effort but by also showing courtesy for the opponent (Hernández-Andreo, Gómez-Mármol & Cifo-Izquierdo, 2020). Every form of sportsmanship can be boosted by PE and promote the development of respect for people in the classrooms of educational centres (Meakin, 1990).

Sportsmanship and its five factors show a significant relationship with other variables. For example, satisfaction, enjoyment and a better attitude towards PE could be related to greater sportsmanship in students (Gutiérrez & Pilsa, 2006). In fact, a study focused on exploring the type of motivation that drives sports practice showed that those subjects who are more motivated towards the task tend to display more sportsmanship behaviours (Sánchez-Oliva, Leo, Sánchez-Miguel, Amado & García-Calvo, 2010). However, those students who are ego oriented demonstrate unsportsmanlike behaviours more often (Pelegrín, 2005), even increasing the tendency to want to injure the opponent on purpose if that means gaining some advantage (Kavussanu & Roberts, 2001). Also, other investigations on moral rationalization have confirmed that higher levels of moral rationalization carry higher levels of sportsmanship (Gutiérrez & Vivó, 2005), and on the contrary, lower levels of moral rationalization lead to more unsportsmanlike conducts (Pelegrín, 2005).

Besides, it is very important to emphasize that the motivational climate generated by the teacher influences the exhibition of sportsmanship in students (Boixadós, Cruz, Torregrosa & Valiente, 2001). Because of this, the influence that socializing agents (mainly parents, siblings, friends, teachers and the educational centre) have is worth mentioning, due to the considerable influence they have on the students and their sportsmanship. Therefore, depending on how they influence students, they themselves will understand that the key to success dwells on effort and personal growth, or will internalize that overcoming others and demonstrating more ability than the rest is ideal (Ramis, Torregrosa, Viladrich & Cruz, 2013). In this way, when analysing the behaviours of parents, it can be observed that good conduct from them (for example, not putting pressure on their

children and creating a positive environment around the task) is tightly related with higher levels of sportsmanship in their children (Leo, Sánchez-Miguel, Sánchez-Oliva, Amado & García-Calvo, 2009).

Studies with contradictory results can also be found, which makes reaching a conclusion about sportsmanship difficult. For example, some affirm that sportsmanship is greater in males (Gómez-Mármol, Sánchez-Alcaraz, De la Cruz & Valero, 2015); however, Gutiérrez and Pilsa (2006) indicate that girls and younger students are the ones who present a higher degree of sportsmanship.

On the other hand, self-determined motivation should be considered because it is a very important factor for the understanding of behavioral orientation towards sportsmanship and fair play practice (Guzmán & Carratalá, 2006). This implies that a higher level of self-determination in the sportsperson is associated with greater beliefs in behaviours oriented towards fair play and, as a result, with less frequent events of aggression and unsportsmanlike conduct.

### *Enjoyment in Physical Education*

The concept of enjoyment in PE refers to the degree of well-being (having fun) that students experience during lessons in the educational centre during school hours (Gómez-Mármol & Sánchez-Alcaraz, 2015). Therefore, satisfaction, enjoyment and a better attitude towards PE can have positive effects on the sportsmanship of students (Gutiérrez & Pilsa, 2006). Additionally, a greater feeling of enjoyment during a PE session will produce a better attitude towards lessons (Gómez-Mármol & Sánchez-Alcaraz, 2015).

The main concern of teachers when selecting contents to cover is that they be motivating and innovative (Giménez, Abad & Robles, 2010). However, for students, the most important reasons to practice physical activity are enjoyment and socializing with others (Pavón & Moreno, 2006).

PE is one of the subjects that generates more enjoyment in students due to the quantity of motivating contents, the variety of the methodologies used and the physical and psychological benefits of physical activity (Granero-Gallegos, Baena-Extremera, Pérez-Quero, Ortiz-Camacho & Bracho-Amador, 2012). However, in different studies, how the levels of enjoyment in PE lessons vary depending on the type of students can be observed (Gómez-Mármol, Sánchez-Alcaraz & Bazaco, 2017; Gutiérrez & Pilsa, 2006).

Moreover, there is a positive correlation between students who value PE more and have a good relationship

with the teacher, with the enjoyment perceived in PE lessons. Hence, those students who value both PE lessons and their relationship with the teacher positively will perceive PE lessons in a more enjoyable manner than those who do not meet these two criteria (Sánchez-Alcaraz & Gómez-Mármol, 2015).

Regardless of the relationship between students and the teacher, it should always be a priority to teach innovative and dynamic content, since it improves motivation towards PE lessons in students (Moreno-Murcia & Vera, 2011). More enjoyment in students during their PE sessions facilitates the development of a better perception of these sessions, as well as the practice of extramural physical practice (Gómez-Mármol, Sánchez-Alcaraz & Bazaco, 2017). Therefore, because less enjoyment of the subject or the school context can be attributed to a lack of enjoyment in the lessons, it is very important to study the variables affecting the perception of PE (Baena-Extremera & Granero-Gallegos, 2015).

Considering the aforementioned, the planning of creative and dynamic sessions should be key, because it improves motivation towards PE sessions (Moreno-Murcia & Vera, 2011). Besides, a critical analysis of students should be promoted because it allows them to obtain a better understanding of the content, which affects positively their perception of their own competencies and, as a consequence, can increase their enjoyment of the process carried out during the lessons (Ntoumanis, 2005).

On the other hand, to create a satisfactory teaching and learning process and to encourage motivation in students, it is vital that in the classroom there is a good motivational environment on the part of the students and the teachers. In this sense, pure, analytic and mixed strategies in practice and a varied teaching style to transform a negative environment into a positive one are suggested (Duda, 2013). In this way, the application of a different teaching style can produce varied effects on the motivational variables and their intention of being physically active (Cox & Williams, 2008).

The creation of a quality environment by the teachers can also contribute to students thinking that they support and care about them, and can encourage students to give their best within their own personal abilities (Ntoumanis, 2005). In short, a good classroom motivational environment is indispensable, although many times the perception of such is not shared by teachers and students. To avoid this event, it is fundamental, on the teacher's part, to satisfy the needs of

students by adapting the contents, the treatment, and the demands to each group. All in all, the importance of teachers creating motivational environments around tasks and learning in PE sessions to increase positive attitudes towards physical activity and promote a healthy lifestyle is corroborated (Cervelló, Moreno-Murcia, Martínez, Ferriz & Moya, 2011).

As a conclusion, the study and intervention in those variables that affect the improvement of values such as enjoyment and satisfaction in the classrooms of school centres is deemed necessary (Baena-Extremera & Granero-Gallegos, 2015).

### *The influence of pedagogical models on sportsmanship and enjoyment in Physical Education*

Through the investigations that have applied PSRM it has been demonstrated that there is a significant improvement in motivation (Li, Wright, Rukavina & Pickering, 2008), personal and social responsibility (Escartí, Gutiérrez, Pascual & Marín, 2010; Valero-Valenzuela, López, Moreno-Murcia & Manzano-Sánchez, 2019), and an increase in self-control, reflected in higher respect towards materials, classmates, facilities, authority and rules (Sánchez-Alcaraz, Courel, Sánchez, Valero & Gómez, 2020; Schilling, 2001). After the application of the PSRM model improvements in levels of responsibility (I, II, III, IV and V), self-control, and sportsmanship have also been registered, as well as a decrease in aggressive behaviours due to lack of contact in a group of students in a Secondary Education centre (Cecchini, Montero, Alonso, Izquierdo & Contreras, 2007). Besides, when applying the PSRM model to primary education students during two consecutive academic years, improvements in certain conducts, attitudes and ways of behaving such as: respecting the rights and feelings of others, solving conflict using dialogue, avoiding classmates' exclusions, and respecting everyone's turn to speak have been observed (Pascual, Escartí, Llopis & Gutiérrez, 2011). Additionally, Sánchez-Alcaraz, Díaz and Valero (2014) demonstrated an improvement in levels of personal and social responsibility as well as in sportsmanship in Primary Education students. Therefore, the beneficial effects of the application of PSRM in an educational context and specifically in the PE subjects are corroborated.

On the other hand, concerning the Sports Education Model (SEM), it is worth mentioning that in the research by Vidoni and Ward (2009) it was noticed, after the application of this pedagogical model, an improvement

in the behaviour of students, an increase in participation and a decrease in disruptive conducts. Moreover, it is affirmed that the application of the SEM has an impact on the culture of the students, changing the hierarchical relationships and the types of motivation (Martínez de Ojeda, Puente-Maxera, Méndez-Giménez, & Mahedero-Navarrete, 2019; O'Donovan, 2003). Then, it is observed in these investigations and scientific studies how the application of this model produces improvement or change in the process of teaching and learning in students during PE lessons (Segovia & Gutiérrez, 2020).

In an investigation based on the application of a combination of the two psycho-pedagogical models MRPS and SEM through the practice of educational kickboxing with students, a significant improvement in values such as social responsibility, violence, friendship, competency, and relationships in teenagers was achieved (Menéndez and Fernández-Río, 2016). In another study also focused on the application of a combination of two pedagogical models, in this case SEM and TGfU, through a teaching unit with a variety of batting games, positive effects were also achieved (Hastie & Curtner-Smith, 2006). After the application, it was concluded that students understood the principles, rules and structure of the games, being able to transfer these to the modalities covered (softball, cricket and made up games). They also developed a higher degree of motivation, willingness to participate and enjoyment in every session of the teaching unit. At the same time, the authors affirm that practice is reinforced by the combination SEM-TGfU compared to when these are applied separately. On the other hand, they admit that in order to achieve success with a combined unit, the teacher must have a superior understanding that transcends simple pedagogical content. In this sense, it is also claimed that better effects in learning are achieved when combining SEM with other models, than when combining these with traditional approaches (Yi-Hsiang, Chen-Hui, I-Sheng & Wei-Ting, 2019).

Therefore, the aim of this investigation was to compare the effects produced on sportsmanship and enjoyment in teenagers when implementing PSRM on a group, as well as the combined model (SEM + TGfU) on another group, during PE lessons. Considering all the previous findings, the research hypothesis predicted that both models would improve levels of enjoyment in students, and that the combination SEM and TGfU will increase the perception of sportsmanship.

## Methods

### *Participants*

A total of 85 students participated in this study, 46 males (54%) and 39 females (46%) from a secondary education centre in the Autonomous Community of the Region of Murcia (Spain). They belonged to two groups of 4<sup>o</sup> year Compulsory Secondary Education and two groups of 1<sup>o</sup> year Baccalaureate (BACC). Their ages were between 16 and 17 ( $16.42 \pm 0.50$ ). One group of 4<sup>o</sup> and one group of 1<sup>o</sup> BACC received PSRM whereas the other two received the combined method. Participants were selected according to a non-probability convenience sampling method (Otzen & Manterola, 2017).

### *Procedure*

The study design corresponded to the longitudinal type because it consisted of measuring the changes in variables after the intervention (Delgado & Llorca, 2004). The students were informed of the purpose of the research and their rights as participants. The intervention was conducted throughout a period of 5 weeks, with a total of 10 sessions lasting each 55 minutes. The proposals were designed according to two different methodological structures. The combined method was used on two groups and the PSRM on the other two. Participants took between 10 and 20 minutes to complete the questionnaires. The questionnaires were administered before (pre-test) and after (post-test) the application of each teaching model to the four groups. To guarantee an appropriate completion of the questionnaires, every question about the purpose of each item was resolved. Additionally, the answers were treated according to the ethical principles of anonymity and confidentiality prescribed in the Declaration of Helsinki.

### *Design of the teaching unit according to the combined method (SEM + TGfU)*

Two different teaching unit of ultimate frisbee were prepared, one for 4<sup>o</sup> Secondary and one for 1<sup>o</sup> BACC. It was done this way to adjust the content and activities to the academic year of the students and the teaching model used. At the same time, the team grouping was mixed (boys and girls), with five members in each group but for two teams of six players. The members of the groups were always the same, chosen by the teacher with the intention of keeping a similar technical and tactical level. To do so, a preliminary assessment session to know the

students in each group's degree of ultimate frisbee mastery before the creation of the teams was required. Additionally, in the case of ultimate frisbee, in the regulations it can be observed that it is a sport in which the figure of the referee is nonexistent. Because of this, the players are the ones in charge of agreeing in the playing area if there is an offense or a punishable situation, from a sporting spirit. This is why it is very important for everyone to know the regulations and the norms relevant to the sport.

For the application of the SEM + TGfU, after the creation of the groups and the corresponding role assignment in each group, the phases of preseason, competition, final games and festivities continued. Additionally, it has to be clarified that the teaching units in the combined model were based on mainly the organizational scheme of SEM, and the structure of the activities and ways to carry out the sessions according to the comprehensive model (TGfU).

#### *Design of the teaching units according to the Personal and Social Responsibility Model (PSRM)*

Two different teaching units of ultimate frisbee were prepared, one for 4<sup>o</sup> Secondary and one for 1<sup>o</sup> BACC. It was done this way to adjust the content and activities to the academic year of the students and the teaching model used.

In this case, a peculiarity was found in the small number of students in the baccalaureate group, with only 9 students. Because of this, the planning of the teaching unit had to be adapted to that specific group.

A progression of the work in every level of the PSRM was done, starting from the first and finishing in the fifth and final one. This last level, more complicated to organize and carry out, consisted of students directing their own session for students in 1<sup>o</sup> Secondary, or in other words, to younger teenagers. In order to do so, very basic guidelines to follow were offered because the 1<sup>o</sup> Secondary students had never practiced ultimate frisbee and the 4<sup>o</sup> Secondary and 1<sup>o</sup> BACC students had never before directed a PE session with people to whom they had to teach certain content.

Besides, in the fourth level of PSRM a peer assessment with an observation sheet by the students was conducted. A student had to observe another specific classmate and fill in the items in the sheet according to their performance. These items were related mainly to sportsmanship and the values worked on during the lessons, plus three items on technique and tactics linked to the sports modality.

Each level of the PSRM was carried out with motivational games that fundamentally promoted active participation and working on values. Moreover, the structure of the model was followed, consisting of introduction, implementation and a final group meeting where students and the teacher assessed the lesson as a debate.

#### *Instruments*

**Enjoyment.** The assessment of enjoyment was done with the final Spanish version of the SSI adapted to PE (SSI-EF), from the Sport Satisfaction Instrument (SSI) (Balaguer, Atienza, Castillo, Moreno & Duda, 1997; Duda & Nicholls, 1992), which consists of 8 items to measure intrinsic satisfaction while doing a sporting activity via two subscales that assess satisfaction/enjoyment (made up of 5 items, e.g. «I normally have fun in PE lessons», with a Cronbach alpha of .345), and boredom (made up of 3 items, e.g. «in PE lessons I often daydream instead of thinking about what I'm doing», with a Cronbach alpha of .654). The way to answer the questionnaire corresponded to a Likert scale ranging from 1 to 5, where 1 corresponded to being totally in disagreement and 5 in total agreement.

**Sportsmanship.** The assessment of sportsmanship was done by using the Spanish version of the Sportspersonship Orientations Scale (MSOS) (Vallerand et al., 1997), consisting of 24 items to measure sportsmanship in students during PE lessons, with 5 subscales that assess commitment to practice (made up of 5 items, e.g. «try to participate in every practice», with a Cronbach alpha of .384), social conventions (made up of 5 items, e.g. «apply the most effort», with a Cronbach alpha of .225), respect for rules and referees (made up of 5 items, e.g. «think how to improve », with a Cronbach alpha of .114), respect for the opponent (made up of 5 items, e.g. «congratulate the opponent after a defeat», with a Cronbach alpha of .104), and negative perspective (made up of 4 items, e.g. «not give up after making a mistake», with a Cronbach alpha of .298). The way to answer the questionnaire corresponded to a Likert scale ranging from 1 to 5, where 1 corresponded to being totally in disagreement and 5 in total agreement.

In this way it was observed that Cronbach alpha values reflected a low reliability of the tools (.70 assessed as acceptable). However, according to the statistical suggestions by Hair, Anderson, Tatham and Black (1998), internal consistency of some factors with lower than .70 Cronbach alpha can be acceptable because of their reduced number of items.

### Statistical analysis

First, the descriptive analysis (mean and standard deviation) of the variables sportsmanship and enjoyment about physical activities for the whole sample were conducted. Then, the test Kolmogorov-Smirnov of a sample was run to check the normality of it. Finally, the effects of the methodologies on the variables studied were examined by running Wilcoxon's test. Additionally, the consistency of the research was studied by using the pre-established values in Cronbach Alpha and the final results were analysed with SPSS 24.0 for Macintosh.

## Results

### Effects of the intervention on enjoyment

In Table 1 the descriptive results on the variable enjoyment for the group PSRM are displayed. Regarding enjoyment, a significant positive change ( $p < .01$ ) in the satisfaction of students towards PE lessons was observed. Enjoyment was assessed with a higher mark at the end ( $M = 4.39$ ,  $SD = .57$ ) of the intervention than at the beginning ( $M = 4.09$ ,  $SD = .86$ ). Moreover, the tendency that was observed revealed that low levels in the dimension boredom were maintained at the beginning and at the end.

In Table 2 the descriptive results for the variable enjoyment for the group with the combined method are shown. On the one hand, regarding enjoyment, satisfaction towards PE sessions increased significantly ( $p < .01$ ) in the final assessment ( $M = 4.30$ ,  $SD = .68$ ) compared to the initial ( $M = 3.97$ ,  $SD = .91$ ). On the other hand, the tendency that was observed was that

Table 1.

Enjoyment results for the whole sample in the two groups in which PSRM was applied

Enjoyment Variable	Pre-Test ( $M \pm SD$ )	Post-Test ( $M \pm SD$ )	P
Satisfaction/enjoyment	4.09 ± .86	4.39 ± .57	.047
Boredom	1.84 ± .68	1.86 ± .83	.830

(Note:  $M$  = Mean;  $SD$  = Standard Deviation)

Table 2.

Enjoyment results for the whole sample in the two groups in which SEM + TGfU was applied

Variable Enjoyment	Pre-Test ( $M \pm SD$ )	Post-Test ( $M \pm SD$ )	P
Satisfaction/Enjoyment	3.97 ± .91	4.30 ± .68	.000
Boredom	2.13 ± .87	1.96 ± .81	.070

(Note:  $M$  = Mean;  $SD$  = Standard Deviation)

Table 3.

Sportsmanship results for the whole sample in the two groups in which PSRM was applied

Sportsmanship Variable	Pre-Test ( $M \pm SD$ )	Post-Test ( $M \pm SD$ )	P
Commitment to practice	4.27 ± .51	4.32 ± .45	.349
Social conventions	3.74 ± .41	3.67 ± .49	.498
Respect for rules and referees	3.74 ± .41	3.23 ± .54	.705
Respect for the opponent	4.10 ± .42	4.11 ± .45	.885
Negative perspective towards practice	3.95 ± .27	3.88 ± .31	.692

(Note:  $M$  = Mean;  $SD$  = Standard deviation)

Table 4.

Sportsmanship results for the whole sample in the two groups in which SEM + TGfU was applied

Sportsmanship Variable	Pre-Test ( $M \pm SD$ )	Post-Test ( $M \pm SD$ )	P
Commitment to practice	4.24 ± .47	4.34 ± .50	.048
Social conventions	3.80 ± .37	3.83 ± .42	.554
Respect for rules and referees	3.09 ± .47	3.27 ± .43	.023
Respect for the opponent	4.13 ± .41	4.16 ± .46	.497
Negative perspective towards practice	3.89 ± .29	3.90 ± .31	.600

(Note:  $M$  = Mean;  $SD$  = Standard deviation)

boredom decreased slightly at the end of the intervention.

### Effects of the intervention on sportsmanship

Table 3 shows the descriptive results on the variable sportsmanship for the group PSRM. Concerning sportsmanship, no significant changes ( $p > .05$ ) were observed between the initial and final assessments in the different dimensions for the variable sportsmanship.

Table 4 displays the descriptive results for the variable sportsmanship for the group that received the teaching unit according to the combined method. Regarding sportsmanship, significant differences were only observed in commitment to PE practice ( $p = .048$ ) and respect for rules and referees ( $p = .023$ ). Commitment to practice increased at the end of the intervention ( $M = 4.34$ ,  $SD = .50$ ) compared to the marks obtained at the beginning ( $M = 4.24$ ,  $SD = .47$ ). The same happened with respect for rules and referees, which achieved higher marks at the end ( $M = 3.27$ ,  $SD = .43$ ) than at the beginning ( $M = 3.09$ ,  $SD = .47$ ).

## Discussion

The aim of this research was to compare how the application of a combined model (SEM + TGfU) and the PSRM on students in Compulsory Secondary Education affects the variables enjoyment and sportsmanship.

Regarding enjoyment, an increase in the item satisfaction was registered for both the PSRM and SEM + TGfU applications. These results coincide with the ones drawn in the research by Menéndez and Fernández-Río (2016), where an improvement in enjoyment in the classroom after the application of the pedagogical models was observed. However, only for the application of the combined method was a slight decrease in the item boredom in students during the PE sessions observed. In this sense, Hastie and Curtner-Smith (2006) affirms that, after combining SEM and TGfU, better effects are obtained compared to when they are applied separately because the willingness to participate and enjoyment increase and boredom decreases.

These results were also in line with the ones obtained in the works by Gómez-Mármol and Sánchez-Alcaraz (2015) and by Sánchez-Alcaraz, Bejerano, Valero, Gómez-Mármol and Courel (2018) because students value with higher marks enjoyment, and with lower marks boredom when participating in PE sessions. However, in these the pedagogical or combined method

to apply is not considered, but rather other aspects that can influence the perception of students. Thus, other aspects that promote enjoyment in participants should also be considered, such as extramural sports practice and the assessment of the PE subject and its preference over others (Sánchez-Alcaraz et al., 2018). Besides, the enjoyment can also depend on the teacher's performance and whether the planning of activities has been correct (Ruiz & Cifo-Izquierdo, 2020).

Because of the scarcity of investigations with combined methodologies as suggested applications, there is a need for a higher number of studies of this type (Gil-Arias, Moreno-Arroyo, Claver, Moreno-Domínguez & Del Villar, 2016). For now, the approach towards combined models has produced positive results; therefore, more investigations in this line of research should be conducted so that they can contribute to offering quality education during Physical Education lessons.

Concerning sportsmanship, after the application of PSRM the results of this study do not match those obtained in other investigations in which better conducts, attitudes and behaviours were observed in students (Cecchini et al., 2007; Pascual, et al., 2011; Sánchez-Alcaraz et al., 2014). Although it is affirmed that values in sportsmanship towards PE are high, in this work the beneficial effects of the application of PSRM in an educational context, specifically in the subject of PE, are not corroborated.

Nevertheless, when applying the combined model SEM + TGfU, commitment to practice and respect for the rules and referees did increase. Each model shows advantages that are enhanced when combined with other models (Menéndez & Fernández-Río, 2016). This, in turn, can lead to positive consequences, as opposed to when only one pedagogical model is used.

Moreover, it is believed that an improvement in satisfaction and enjoyment towards Physical Education can also be related to higher sportsmanship in students (Gutiérrez & Pilsa, 2006; Martínez de Ojeda et al., 2019), but as it was observed in the study, a contradiction has likely taken place. In this case, in students the perception of the variable enjoyment increased, but this was not determined by the increase of the variable sportsmanship. Either way, the suggestions for combined models produce a positive transfer outside the field of PE, in other words, they can be key to promote a sportive practice in students (Antón-Candanedo & Fernández-Río, 2017). A study focused on the combination of SEM and TGfU (Menéndez & Fernández-Río, 2016) concluded

that students understand the principles, rules and structure of the games, and are able to transfer these to sportive practices. In this case when both models were combined, commitment to practice increased, meaning that a transfer towards sportive practice can be corroborated. SEM improves physical condition (Segovia & Gutiérrez, 2020) and by combining SEM, sports competition is improved (Yi-Hsiang et al., 2019).

Maybe the fact that one of the fundamental aspects of SEM is mental development (Menéndez & Fernández-Río, 2016) can be, precisely, the cause of significant changes in this regard. Unlike this model, in the application of other combined methods, sportsmanship is not considered a key element during the intervention. PSRM also produces significant changes in perception in students, but in this case related to social and personal responsibility (Sánchez-Alcaraz et al., 2020; Valero-Valenzuela et al., 2019). Therefore, in other studies there are observed improvements and changes in the process of teaching and learning in the value of sportsmanship in students during PE sessions, but only when applying SEM as pedagogical model or combination, whereas the same does not happen when applying PSRM.

It is important to remark that the data was gathered through questionnaires, which present bias such as being subjected to social desirability (Choi & Pak, 2005). In addition, the low values of internal consistency obtained in various factors in the two dependent variables compromise the reliability of the results. To avoid this error in future research projects other tools to find more objective and reliable measures should be used.

And so, the research hypotheses were partially confirmed, because through both intervention proposals enjoyment increased. Nonetheless, only the combined model SEM and TGfU produced positive effects on commitment to practice and respect for rules and referees in sportsmanship. For its part, PSRM did not show any effects in any of the dimensions in the variable sportsmanship.

One of the main limitations of this study was that the sample was conveniently selected, or in other words, the groups were already formed by their respective classes, as is normal in school centres. This means that the sample was not distributed randomly but that the four groups were predetermined and belonged to the same educational centre. Another factor that clearly influenced the intervention was the size of the sample, with only 85 students. This makes extrapolating results to the rest of the population difficult.

Regarding future proposals, a study to acknowledge

the limitations of this research is suggested, increasing the sample size, considering different educational centres and academic levels, and combining qualitative and quantitative data gathering methodologies. Besides, it would be interesting to analyse the effects of these methodologies on variables related to academic performance.

## Conclusions

The main objective of this study was to analyse the effect that the application of the combined model (SEM + TGfU) has on the variables enjoyment and sportsmanship in PE students in Secondary and Baccalaureate, and compare it to the effect that the application of PSRM has on the same variables. Therefore, addressing the set goal and observing the results obtained through the application of the different teaching models on the student sample, it can be concluded that:

The implementation of PSRM increases enjoyment in participants.

That the implementation of the combined model SEM = TGfU produces positive effects on enjoyment, increasing satisfaction and decreasing boredom, and on sportsmanship in commitment to practice and respect for rules and referees.

This work allows future and in-service PE teachers to approach innovative teaching models such as PSRM and the combined model SEM + TGfU. The main idea is to augment the repertoire of methodological possibilities of the teaching professional, so that when they have to plan or modify their teaching programme, they have access to a considerable variety of options regarding the methodology to choose, knowing their advantages and disadvantages to obtain the best results and improve the process of teaching and learning in students.

The main limitation of this work is that there is no control group. Future lines of research could compare the results of the participating group with a control group.

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