

Puente-Maxera, F.; Mahedero-Navarrete, M.P.; Méndez-Giménez, A. y Martínez de Ojeda, D. (201x) Educación deportiva, roles y vulnerabilidad. Influencia en la responsabilidad e interculturalidad / Sport Education, Roles and Vulnerability. Influence on Responsibility and Intercultural Competence. Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte vol. (*) pp. *. [Http://cdeporte.rediris.es/revista/___*](http://cdeporte.rediris.es/revista/)

ORIGINAL

**SPORT EDUCATION, ROLES AND VULNERABILITY.
INFLUENCE ON RESPONSIBILITY AND
INTERCULTURAL COMPETENCE**

**EDUCACIÓN DEPORTIVA, ROLES Y VULNERABILIDAD.
INFLUENCIA EN LA RESPONSABILIDAD E
INTERCULTURALIDAD**

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Código UNESCO / UNESCO code: 5899 Educación Física y Deporte / Physical Education and Sport.

Clasificación Consejo de Europa / Council of Europe classification: 4. Educación Física y Deporte comparado / Compared Sport and Physical Education; 5. Didáctica y metodología / Didactics and methodology.

Recibido 11 de octubre de 2018 **Received** October 11, 2018

Aceptado 2 de febrero de 2019 **Accepted** February 2, 2019

ABSTRACT

This paper examines the effect of two roles' dynamics (fixed and rotating) on Spanish adolescents' responsibility and intercultural competence levels. Following a quasi-experimental, simple crossover design with repeated measures (pretest-post1-post2), 96 high school students ($M_{age} = 12.2$) and one teacher take part in two consecutive Sport Education-based teaching units of

basketball and floorball, respectively. Data collection is shown through semi-structured interviews and questionnaires. Results show positive impact from fixed roles on social responsibility and intercultural variables (sensitivity and behavior), especially in males. There are slightly negative consequences on female' responsibility levels. Findings reveal and emphasize the importance of using fixed roles when dealing with socially vulnerable contexts, as well as first experiences with Sport Education.

KEY WORDS: physical education, pedagogical models, responsibility, at risk students.

RESUMEN

El presente estudio examinó los efectos de dos dinámicas de roles (fija y rotativa) sobre los niveles de responsabilidad y competencia intercultural en adolescentes españoles de un contexto socialmente vulnerable. Formaron parte del estudio 96 estudiantes de primer curso de educación secundaria ($M_{edad} = 12.2$) de un centro ubicado en Andalucía (España). Siguiendo un diseño cruzado simple, cuasi-experimental y con medidas repetidas (pretest-post1-post2), los participantes asistieron a dos unidades didácticas consecutivas con Educación Deportiva sobre baloncesto y floorball, respectivamente. Se recabó información mediante entrevistas semi-estructuradas y cuestionarios. Se evidenció un mayor impacto de los roles fijos en la responsabilidad social y en las variables interculturales (sensibilidad y comportamiento), con especial incidencia en varones. Ligeras consecuencias negativas fueron halladas en los niveles de responsabilidad de estudiantes de sexo femenino. Se desvela la importancia de asumir roles fijos en contextos socialmente vulnerables, así como en experiencias iniciales con Educación Deportiva.

PALABRAS CLAVE: educación física, modelos pedagógicos, responsabilidad, estudiantes en riesgo.

INTRODUCTION

The relationship between students' life conditions and learning opportunities has been an object of study for decades (Serra & Canciano, 2006). Among such production, a special interest has been poured into people from socially vulnerable contexts. Such context refers to the space inhabited by individuals who maintain a distorted relationship with the institutions of society (family, school, health service, etc.) characterized by the progressive accumulation of negative experiences, self-perception of incompetence and low social expectations (Haudenhuyse, Theeboom & Nols, 2012). At the educational level, most of the needs that spring from these contexts have been satisfied by innovative methods. Among all the different typologies of innovation (Rivas, 2002), the one concerning didactical processes have assumed special relevance in the last years. As a result of those processes, numerous programs guiding the teaching performance have emerged within the Physical Education (PE) context, leading to the development of pedagogical models (Casey & Dyson, 2009; Hastie & Casey, 2014; Metzler, 2011).

Metzler (2011) identifies eight pedagogical models. One of them, the Sport Education model (SEM, Siedentop, 1994), was born in response to the verticality of direct instruction aiming to provide students with authentic, meaningful and contextualized experiences (Siedentop, Hastie & van der Mars, 2011). Its three main goals include the developing of competent, literate and enthusiastic students (Siedentop et al., 2011). Six basic features characterize this model: affiliation, season, formal competition, record keeping, festivity and final event. Several studies have been carried out following these methodological principles (see Araújo, Mesquita & Hastie, 2014; Hastie, Martínez de Ojeda & Calderón, 2011). The most remarkable findings highlight the benefits of the model on developing prosocial values (García-López & Gutiérrez, 2013), motivation (Méndez-Giménez, Fernández-Río & Méndez-Alonso, 2015) and competence levels (Hastie, Sinelnikov & Guarino, 2009), among others. However, research is still scarce with respect to the model's influence on responsibility. Applying hybrid programs (SEM and Teaching Personal and Social Responsibility), Menéndez-Santurio and Fernández-Río (2016; 2017) revealed the benefits of kickboxing programs on Spanish adolescents' personal and social responsibility. It is equally noteworthy the work by Fernández-Río, Méndez-Giménez and Méndez-Alonso (2017) who found significant improvements on the students' social responsibility, emphasizing the importance of taking roles on the development of such variable.

Another central factor which has been frequently identified in the configuration of socially vulnerable contexts is the presence of culturally diverse students (Subirats, Carmona & Torruella, 2005). Over the last decades, a wide production made across different subject areas has been addressed to explore, know and improve the teaching and learning processes in multicultural scenarios. PE has not been indifferent to such production and numerous authors agree with the existence of an intercultural PE (Contreras, Gil, Cecchini & García-López, 2007). In this way, there have been studies covering both students (Grimminger-Seidensticker & Möhwald, 2017) and teachers' perceptions (Pastor-Vicedo, Contreras, Gil-Madrona & Cuevas-Campos, 2016).

However, there is scant evidence on the effectiveness of pedagogical models, in general, and SEM, in particular, in multicultural contexts (Méndez-Giménez, Puente-Maxera & Martínez de Ojeda, 2017).

Numerous investigations aimed to examine the effect of each of the SEM' main features, assumed these as "non-negotiable" (Hastie & Casey, 2014). In this way, Hastie, Ward and Brock (2017) analyzed the effects of grouping students according to their ability, showing improvements on the low-skilled students' game performance when playing against students of the same level. Such improvements were greater than those of the students participating in heterogeneous teams. Taking roles, through a fixed or rotating system is another inherent feature of SEM (Siedentop, 1994). Two recent studies have explored the impact of these roles' dynamics (fixed and rotating) on sixth-grade students' motivational variables (Puente-Maxera, Méndez-Giménez & Martínez de Ojeda, 2018b) and intercultural competence (Puente-Maxera, Méndez-Giménez & Martínez de Ojeda, 2017). The first study informs improvements caused by both treatments (fixed and rotating roles) on the three basic psychological needs, as well as on task orientation, but the rotating dynamic was the only one in promoting significant gains on the ego-clime. Likewise, the second study (Puente-Maxera et al., 2017) finds improvements on students' intercultural sensibility after employing both rotating and fixed roles, but being greater those caused by the first one.

Despite these contributions, there is no current evidence which examines the effect of roles dynamics (fixed and rotating) on responsibility levels, being this shortage extrapolated to secondary education contexts. Using a simple crossover design, this study aims to overcome these limitations by analyzing the impact of roles dynamics on adolescents' responsibility and intercultural competence levels. Hence, it is proposed that (a) rotating roles would provoke significant improvements on personal and social responsibility levels, higher than those caused by fixed roles (Hypothesis 1); secondly, (b) rotating roles would lead to significant gains on the intercultural behavior' positive dimensions, as well as a significant decline on irresponsibility, being these results better than those provoked by fixed roles (Hypothesis 2); and finally, (c) rotating roles would promote significant improvements on students' intercultural sensibility greater than those caused by fixed roles (Hypothesis 3).

MATERIAL AND METHODS

Design

This study followed a simple crossover, quasi-experimental design with repeated measures (figure 1). Previous SEM studies have been approached using quasi-experimental (Martínez de Ojeda, Méndez-Giménez, & Valverde, 2016) and crossover designs (Calderón, Martínez de Ojeda, & Hastie, 2013). In this paper, both quantitative (e.g., questionnaires) and qualitative (e.g., interviews) data were used. In order to guarantee the treatment validity, it were taken into account the recommendations by Hastie and Casey (2014) for studies based on teaching models, which prioritize three aspects: (a) a deep description of the teaching unit, (b) a detailed validation of the pedagogical

model intervention and (c) a rich description of the context. The design was supervised by two experts in teaching models.

Participants

Five classes of 96 first grade students (53 boys and 43 girls, average age = 12.2 years, $SD = 0.82$) from a coeducational high school in southern Spain participated. At ethnic-cultural level, six students were immigrants (mainly, of Maghrebi origin) and 90 of autochthonous origin (Spanish nationality). Among the last group mentioned, six students came from gipsy ethnic background. It is also noteworthy the presence (13%) of students from a marginalized neighborhood. All students lacked of experience with SEM. The teaching was assumed by a PE teacher (PhD in Physical Education) with 11 years of teaching experience (7 of them applying SEM). The study had the approval of the board of the school. Parents or legal guardians of each student signed the informed consent letter to allow their child to participate in the study which had also the approval of the Ethics Committee of the researchers' university located in the north of Spain.

The Sport Education seasons

Following the features of SEM, two teaching units (basketball and floorball) of twelve sessions of 60 minutes each (twice a week) were designed. Both units progressed through the following phases: (I) introductory, (II) directed by teacher, (III) autonomous practice, (IV) formal competition, and (V) final event. Each class was organized into teams of five or six students, established by the teacher, based on gender (boy / girl), nationality (Spanish / immigrant) and ethnic group (gipsy students). In each group, the students took upon different team roles: captain, physical trainer, material manager and mediator in conflict situations. In addition to these responsibilities, it is necessary to mention the referee and scorekeeper roles (*duty team*), of rotating character, and performed by each one of the participants.

Each teaching unit was conducted in all class groups simultaneously, so that, in the first place, a basketball unit (October-December) was carried out, followed by a floorball unit (January- March). The differential treatment (independent variable) entailed the roles' dynamic assigned to each unit, which may be (a) fixed or (b) rotating. In this way, when some groups assumed fixed roles, the others worked through rotating roles and, when tackling the second unit, the groups alternated the treatment. Following the interests of the study, groups A and B ($n = 43$) were matched and they were called Experimental Group 1 (EG-1), while in groups C, D and E ($n = 53$) was made the same, resulting in Experimental Group 2 (EG-2). EG-1 began with rotating roles and EG-2 with fixed roles. Regarding the roles rotation, it took place every two lessons. In order to organize this rotation, the teams had a plan with the chronological order that they had to follow for each one of the roles.

| | Unit 1: Basketball | Unit 2: Floorball |
|------------------------------------|--------------------|-------------------|
| Experimental group 1 (A y B) | Rotating roles | Permanent roles |
| Experimental group 2 (C, D y E) | Permanent roles | Rotating roles |

Figure 1. Study's cross over design

Data collection

Students' perception

Questionnaires

Personal and Social Responsibility. The Spanish adaptation of the Personal and Social Responsibility Questionnaire was used (Escartí, Gutiérrez, & Pascual, 2011). It was composed by 14 items rated on a Likert scale from 1 (*totally disagree*) to 6 (*totally agree*) and divided into two factors: personal responsibility (e.g., "I try to improve even if I do not like tasks") and social responsibility (e.g., "I respect my classmates").

Intercultural behavior. The Student's Behaviors' Self-evaluation Scale was used (Kellis, Vernadakis, Albanidis, Derri, & Kourtsesses, 2010) which measures the students' social behavior in multicultural contexts. It consisted of 18 items distributed in five scales: *acquaintance* (3 items), *irresponsibility* (3 items), *reward* (4 items), *help* (4 items) and *goals* (4 items). The *goals* scale was omitted considering it irrelevant for the study, as decided in other previous studies in Spanish context with SEM (Méndez-Giménez et al., 2017). The questions were evaluated on a Likert scale that ranges from 1 (*never*) to 5 (*always*).

Intercultural sensibility. The Intercultural Sensibility Scale was applied (Sanhueza & Cardona, 2008) composed by ten items whose answers oscillated between 1 (*never true*) and 4 (*always true*). The instrument had a two-factor structure: (a) positive emotional response (PER, 7 items) and (b) negative emotional response (NER, 3 items). Given the few items in the NER, for the present study, this subscale was adapted, increasing in two items.

The questionnaires were completed through the *GoogleForm* platform during class time, at the school's computer classroom. Students spent an average time of 20 minute for their completion.

Teacher's perception

Interviews. The teacher was subjected to three semi-structured individual interviews at different times (before -I1-, after the first unit -I2-, and after the

second one -I3-). Interviews were conducted by one of the researchers, and were reviewed by two experts unrelated to data collection. As Ruiz (2012) states, the interview aims to understand rather than explain the facts, and it lacks of fixed patterns of response categories. Each interview lasted an average of 30 minutes and was carried out using *Skype* tool.

Data analysis

Quantitative data analysis

Internal consistency of each variable and their scales were evaluated using the Cronbach's alpha. The results showed acceptability levels ($\alpha > 0.70$, Nunnally, 1978) in all factors, with the exception of Personal Responsibility, Irresponsibility (PreT) and NER (PreT and Post1). Nevertheless, considering the interest for the study, and according to previous studies results (Spittle & Byrne, 2009), those values between 0.60 and 0.70 were used. The results in Post1 in the NER ($\alpha = 0.51$) were ignored for subsequent analyzes.

The normality of the variables was checked by the Kolmogorov-Smirnov test and for testing variances homogeneity it was conducted the Levene test. The results showed that the normality criterion was not met, so nonparametric tests were used. Descriptive statistic tests (means and standard deviations) were calculated and the Wilcoxon rank test was run for paired samples, in order to compare results at different collection times. Finally, intergroup differences by gender were evaluated using the Mann-Whitney *U* test for two independent samples. The IBM-SPSS program (version 23.0) was used for statistical analyzes. In each case, the significance level was set at 0.05.

Qualitative data analysis

Data was analyzed by an expert unrelated to the data collection process. First, a coding phase was carried out in which each comment was associated, at least, with one color and one abbreviation. After a saturation process, the following categories were obtained: (a) responsibility, (b) peer relationship, (c) involvement and (d) neutral. Remarks were grouped according to this categorization, keeping its temporal structure. A subsequent mapping revealed strong connections between responsibility and involvement categories, so they were reorganized into one of the final categories. In order to consolidate the validity of collected data, temporary triangulation strategies were assumed (Aguilar & Barroso, 2015).

RESULTS

Quantitative results

Table 1 shows the descriptive statistics of each of the variables analyzed. No significant differences are reported in the *personal responsibility* dimension, in any of the administrations. Regarding *social responsibility*, there was a significant increase ($p < 0.05$) in men, and a significant decrease in women in

EG-1 after using fixed roles. The greatest number of significant changes is found on the *intercultural behavior* variable, finding effects in both experimental groups and in all administrations. Significant increases on *acquaintance*, *help*, and *reward* were observed in males of both experimental groups after experiencing fixed roles, being these effects partially extendable to the total sample. The rotating dynamics causes significant increases on women's *reward* in EG-1 and males' in EG-2, as well as on the *acquaintance* in students in EG-1. There is a significant increase on the *irresponsibility* dimension in women and in the total sample in EG-2. Finally, there is evidence of an increase on men's PER and in the total *n* after having employed fixed roles. The rotating dynamics causes a significant increase on the PER in EG-2.

Table 1. Descriptive statistics of the variables analyzed for the total sample and gender

| | EG-1 (Rotating - Fixed) | | | | | | EG-2 (Fixed - Rotating) | | | | | |
|------------------------------|-------------------------|------|--------------------|------|--------------------|------|-------------------------|------|--------------------|------|--------------------|------|
| | PreT | | Post1 | | Post2 | | PreT | | Post1 | | Post2 | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Social responsibility | | | | | | | | | | | | |
| Men | 4.66 ^{ab} | 1.07 | 4.44 ^a | 1.22 | 4.70 ^b | 1.04 | 4.73 | 1.05 | 5.08 | 0.85 | 5.15 | 0.92 |
| Women | 5.34 ^a | 0.57 | 5.12 ^{ab} | 0.83 | 5.09 ^b | 0.68 | 5.32 | 0.69 | 5.31 | 0.70 | 5.14 | 0.86 |
| Acquaintance | | | | | | | | | | | | |
| Total N | 4.09 ^a | 0.86 | 4.28 ^b | 0.88 | 4.27 ^b | 0.88 | 4.08 ^a | 1.06 | 4.44 ^b | 0.80 | 4.33 ^{ab} | 0.85 |
| Men | 3.90 ^a | 0.89 | 4.11 ^{ab} | 0.90 | 4.19 ^b | 0.81 | 3.89 | 1.11 | 4.36 | 0.91 | 4.30 | 0.75 |
| Irresponsibility | | | | | | | | | | | | |
| Total N | 1.36 | 0.55 | 1.32 | 0.52 | 1.40 | 0.58 | 1.67 ^{ab} | 0.92 | 1.62 ^a | 1.13 | 2.15 ^b | 1.23 |
| Women | 1.23 | 0.51 | 1.33 | 0.67 | 1.33 | 0.50 | 1.38 ^{ab} | 0.65 | 1.15 ^a | 0.60 | 1.91 ^b | 1.04 |
| Reward | | | | | | | | | | | | |
| Total N | 3.84 ^a | 1.03 | 4.05 ^b | 1.01 | 4.05 ^b | 1.00 | 4.08 | 1.14 | 4.40 | 0.90 | 4.29 | 0.89 |
| Men | 3.72 ^a | 1.11 | 3.85 ^{ab} | 0.94 | 4.02 ^b | 0.89 | 3.77 ^a | 1.26 | 4.32 ^b | 1.04 | 4.37 ^b | 0.79 |
| Women | 3.95 ^a | 0.96 | 4.25 ^b | 1.07 | 4.09 ^{ab} | 1.12 | 4.51 | 0.81 | 4.55 | 0.63 | 4.17 | 1.03 |
| Help | | | | | | | | | | | | |
| Total N | 3.93 | 1.07 | 4.01 | 1.07 | 4.08 | 0.91 | 4.19 ^a | 0.92 | 4.46 ^b | 0.77 | 4.22 ^{ab} | 0.96 |
| Men | 3.81 ^a | 1.05 | 3.86 ^{ab} | 1.06 | 4.00 ^b | 0.91 | 3.91 ^a | 0.93 | 4.33 ^b | 0.83 | 4.25 ^{ab} | 0.83 |
| PER | | | | | | | | | | | | |
| Total N | 3.43 ^a | 0.61 | 3.42 ^{ab} | 0.64 | 3.52 ^b | 0.64 | 3.37 ^a | 0.76 | 3.62 ^b | 0.65 | 3.52 ^{ab} | 0.59 |
| Men | 3.34 ^a | 0.56 | 3.24 ^a | 0.68 | 3.41 ^b | 0.61 | 3.23 ^a | 0.81 | 3.52 ^{ab} | 0.68 | 3.49 ^b | 0.55 |

Note: In each row, means with different superscripts differ at least at a $p < 0.05$ level. For simplicity, analyzes have been omitted when no significant changes emerged.

Next, table 2 presents the results related to the Wilcoxon rank test for each of the variables analyzed, established by gender and experimental group.

Table 2. Z scores and bilateral asymptotic significance (Sig. A. Bil.) of the Wilcoxon rank test of the study variables

| | EG-1 (Rotating - Fixed) | | | EG-2 (Fixed - Rotating) | | |
|------------------------------|-------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| | Post1 – PreT | Post2 – PreT | Post2 – Post1 | Post1 – PreT | Post2 – PreT | Post2 – Post1 |
| Social responsibility | | | | | | |
| Z man | -0.482 ^b | -1.387 ^b | -2.045 ^b | -1.000 ^b | -1.746 ^b | -1.170 ^b |
| Asympt. sig. (bilateral) | 0.630 | 0.166 | 0.041 | 0.317 | 0.081 | 0.242 |
| Z woman | -1.571 ^b | -2.123 ^b | -0.066 ^b | -0.281 ^b | -1.111 ^b | -0.421 ^b |
| Asympt. sig. (bilateral) | 0.116 | 0.034 | 0.948 | 0.779 | 0.267 | 0.674 |
| Acquaintance | | | | | | |
| Z total N | -2.142 ^b | -2.104 ^b | -.075 ^b | -2.007 ^b | -1.392 ^b | -0.368 ^b |
| Asympt. sig. (bilateral) | 0.032 | 0.035 | 0.940 | 0.045 | 0.164 | 0.713 |
| Z man | -1.373 ^b | -2.469 ^b | -0.625 ^b | -1.852 ^b | -1.597 ^b | -0.213 ^b |
| Asympt. sig. (bilateral) | 0.170 | 0.014 | 0.532 | 0.064 | 0.110 | 0.832 |
| Irresponsibility | | | | | | |
| Z total N | -1.363 ^c | -0.473 ^b | -0.886 ^b | -1.401 ^b | -1.361 ^b | -2.219 ^b |
| Asympt. sig. (bilateral) | 0.173 | 0.636 | 0.376 | 0.161 | 0.174 | 0.026 |
| Z woman | -0.071 ^c | -0.898 ^b | -0.362 ^c | -1.633 ^c | -1.206 ^b | -2.536 ^b |
| Asympt. sig. (bilateral) | 0.943 | 0.369 | 0.717 | 0.102 | 0.228 | 0.011 |
| Reward | | | | | | |
| Z total N | -2.449 ^b | -2.127 ^b | -0.446 ^b | -1.659 ^b | -0.810 ^c | -0.525 ^c |
| Asympt. sig. (bilateral) | 0.014 | 0.033 | 0.655 | 0.097 | 0.418 | 0.600 |
| Z man | -1.395 ^c | -2.281 ^b | -1.582 ^b | -2.165 ^b | -2.161 ^c | -0.105 ^c |
| Asympt. sig. (bilateral) | 0.163 | 0.023 | 0.114 | 0.030 | 0.031 | 0.916 |
| Z woman | -1.984 ^b | -0.810 ^c | -0.952 ^b | -0.171 ^c | -1.688 ^b | -0.933 ^b |
| Asympt. sig. (bilateral) | 0.047 | 0.418 | 0.341 | 0.865 | 0.091 | 0.351 |
| Help | | | | | | |
| Z total N | -1.093 ^b | -1.696 ^b | -0.540 ^b | -2.511 ^b | -0.049 ^c | -1.077 ^c |
| Asympt. sig. (bilateral) | 0.274 | 0.090 | 0.589 | 0.012 | 0.961 | 0.281 |
| Z man | -0.774 ^c | -2.072 ^b | -0.865 ^b | -2.777 ^b | -1.164 ^b | -0.029 ^c |
| Asympt. sig.. (bilateral) | 0.439 | 0.038 | 0.387 | 0.005 | 0.244 | 0.977 |
| PER | | | | | | |
| Z total N | -0.089 ^b | -2.184 ^b | -1.827 ^b | -2.426 ^b | -1.452 ^b | -0.297 ^b |
| Asympt. sig. (bilateral) | 0.929 | 0.029 | 0.068 | 0.015 | 0.147 | 0.767 |
| Z man | -0.896 ^b | -2.491 ^b | -1.996 ^b | -1.648 ^b | -2.024 ^b | -0.229 ^b |
| Asympt. sig. (bilateral) | 0.370 | 0.013 | 0.046 | 0.099 | 0.043 | 0.819 |

Note: In each row, means with different superscripts differ at least at a $p < 0.05$ level. For simplicity, analyzes have been omitted when no significant changes emerged.

Results of the Mann-Whitney U test reflect significant differences in gender distribution, on social (PreT and Post1) and personal responsibility (PreT) in EG-1, as well as in reward and help (PreT), and irresponsibility and REP (Post1) variables in EG-2.

Qualitative results

The results obtained from the qualitative data are presented below, based on the emerging categories: (I) perception of responsibility and involvement, (II) peer relationships, collaborative relationships and disruptive behaviors.

1. Perception of responsibility and involvement

Regarding the assumed role dynamics, the teacher recognized advantages both for those who performed fixed ("More opportunities for improving in the chosen responsibility", I1) and rotating roles ("If a student does not play a role well, he or she can later play others", I1) warning of the difficulty that could involve their learning in students without experience with SEM. According to the teacher's comments, the level of responsibility "considerably" increased (I2) once the first intervention was concluded. She stated that in the group with rotating roles, they required more time to be executed, although she did not observe significant differences in their performance ("They took a little longer, but they did it correctly too", I2). This circumstance was associated with the previous teaching work, the use of rotation cards and the perception of a greater intragroup empathy.

The increase in responsibility was also highlighted by the teacher after completing the second intervention ("I believe that the level [of responsibility] has increased due to the fact that they have been working together", I3). In terms of gender, as initially ventured, she did not notice any remarkable differences, although she did say that, in female students, the responsibility considerably increased during the formal competition phase, and the way in which "they encouraged men" was noteworthy (I3). Regarding the roles, the teacher valued the good work of both groups. She observed that, in the group with rotation, the changes were carried out correctly ("They knew perfectly what they had to do", I3). The access to new functions (in their first experience they had played the same role) resulted in a greater involvement. They did not despise the assumption of roles considered as "less desirable" but, as the teacher indicated, "If they liked a specific role, they knew it would come later" (I3). The teacher highlighted a more relaxed work environment in those who exercised fixed roles. From his perspective, this was due to the fact that each one of the roles was well automated.

2. Peer relationship, collaborative relationships and disruptive behaviors

According to the teaching perspective, responsibility and establishment of norms had a positive impact on peer relationships ("By establishing rules, roles and other characteristics of the model, relations have improved", I2). Initially, they were marked by the existence of regular disputes and conflicts ("The first sessions, I observed lack of responsibility, the students had no respect for the rules, they argued a lot", I3), with hardly any collaborative relationships. She was somewhat more ambiguous about the competition phase ("There could be conflicts", I1). Even considering that the conflicts would not be distinguished by the cultural characteristics of the students, she understood that less involvement could lead to more conflictive situations.

After completing the first unit, the teacher appreciated an "evident" improvement in social relationships (I2), with a special impact on students with immigrant background. This was reflected in greater integration and the creation of new bonds. On an intragroup level, the affiliation was manifest, pointing out how the initial disagreement regarding groupings turned into acceptance in both groups

("They have been very good in the whole experience and, in the end, some even thanked me that, (...) independently that they were with their friends, they had worked and they were having a good time", I2). According to the teacher, there were differences in terms of inter and intragroup collaboration. She assured that in situations in which a peer had difficulties in the performance of his function, a partner, using his previous knowledge of the role, helped him or her. This was exemplified, in the last interview, with the role of captain: "Others who had been captain before, if they saw that a partner had problems, they helped him". This help arose independently of the gender and nationality of the students.

Collaborative relationships were maintained during the second unit. However, the teacher stressed that certain actions highly appreciated in the previous unit (for example, intragroup feedback when performing responsibilities), "were not that necessary" (I3) in this occasion, given the more fluid individual work perceived by her. The conflicts diminished, being less present than in the first unit. This was described by the teacher: "Conflicts have been eliminated and we have gone from practically not being able to play, because nobody respected a norm, to not only respect the norms but conflicts, if they occur, are solved" (I3). Several arguments emerged from the teacher comments: (a) the settlement of fair play, (b) the intragroup pressure and (c) the figure of the mediator ("The mediators were concerned that this did not happen (...). In the moment that something happened, that could it be the case, it was eliminated and the group continued", I3). The role of mediator was decisive during the competition phase where, according to the teacher, most of the conflicts were concentrated. Improvements in conflicts also appeared in intercultural terms. The teacher highlighted the case of a gypsy student whose behavior, more negative a priori, improved with the second experience.

DISCUSSION AND CONCLUSIONS

The present study has examined the effects of two SEM-based interventions distinguished by the assumed role dynamics (fixed or rotating), on three socio-affective variables in adolescents enrolled in a high school from a socially vulnerable context. As a starting hypothesis it was established that the assumption of rotating roles would cause significant improvements on both personal and social responsibility, being higher than those raised by fixed roles. In opposition to this first hypothesis, the results show significant positive effects on social responsibility in men in EG-1 after using fixed roles, with no significant incidence caused by the rotating dynamic. These results differ from those revealed by Menéndez-Santurio and Fernández-Río (2016; 2017), as well as those reported by Fernández-Río et al. (2017), who in different experiences with the model (the first authors through a hybrid program), found improvements in the social responsibility of Spanish adolescents using rotating roles. As in this study, in the aforementioned experiences the students were exposed for the first time to learning through SEM.

Unexpectedly, the assumption of fixed roles led to a significant decrease on women's social responsibility in EG-1 after the second experience, diverging from what was observed by the teacher who highlighted improvements in the

level of responsibility developed by the students. This fact presages negative consequences derived from a summative intervention effect, being able to be subordinated to the nature of the content (*invasion games*) and the consequent students' assumption of a less protagonist playing role. A recent study has shown positive relationships between social responsibility and physical activity levels among adolescent students (Gómez-Mármol, Sánchez-Alcaraz, De la Cruz, Valero & González-Víllora, 2017). Future interventions should explore the effects of SEM and its role dynamics, on students' responsibility and physical activity levels, considering the inclusion of new contents. On the other hand, in the group where students rotated roles after assuming fixed roles (EG-2) no significant changes were observed. Considering the characteristics of the context and the starting point, the fact that the rotating dynamic did not promote any significant change on any of the experimental groups should be assumed as positive. No significant differences emerged on personal responsibility either in both groups, although similar trends on the social dimension were observed (slight declines when working with rotating roles followed by gains when assuming fixed roles; sustained decreases over time in women).

Against the second hypothesis, the quantitative results reveal a greater impact of the fixed roles dynamic, with respect to the rotating one, since its promotion of significant increases on each of the intercultural behavior' positive dimensions in students from both groups, with special incidence in males. These results coincide partially with that reported by Méndez-Giménez et al. (2017) who, in a SEM experience about mime, and after using fixed roles, revealed significant increases on the cooperative dimension in a group of preadolescents. In the present study, the inclusion of the role of mediator implied a novelty with regard to what was done in that (Méndez-Giménez et al., 2017), being decisive both in the creation of collaborative relationships and in the reduction of conflicts. Authors such as Farias (2017) underline the importance of the role of mediator on the development of social responsibility, being helping the others an associated value with this dimension.

Even causing positive effects (significant increases on the *relationship* and *reward* dimensions), in an unsuspected way the rotating dynamic promoted an increase on women's irresponsibility in EG-2. These results are in line with those found on the social responsibility construct. The derived effects from the interaction of dynamics, at the expense of the rotating one, seem to reveal the importance of using fixed roles in students with no experience learning through this model, extending its suitability to initially apathetic students towards the content. The fact that the most negative consequences arise in second experiences, independently of the experimental condition, leads to reflect on negative consequence in female students derived from a prolonged effect of the model. In terms of social status (Brock, Rovegno & Oliver, 2009), it can be argued that in the rotating dynamic the leadership changes, being able to cause acceptance problems in certain roles, being more sensitive in socially vulnerable contexts. Future interventions may account for these circumstances.

It was also hypothesized that the group that followed rotating roles would show significant improvements on the PER, higher than those caused by the fixed dynamic. Participants, in both groups, exhibited significant increases in this

variable when they were taught using fixed roles, thus converging with the findings reported by Puente-Maxera, Méndez-Giménez and Martínez de Ojeda (2018a) among preadolescent students. On the other hand, the rotating dynamic caused significant increases on the PER, although these only occurred in males in EG-2. These results, in conjunction with the previous ones, reject the third hypothesis. The increase on the PER has been reported in a previous study with SEM (Puente-Maxera et al., 2017) where, after comparing role dynamics, a greater incidence of the rotating one was observed. In line with what was noticed by these authors, in the current study, from a qualitative point of view, the notion of affiliation is highlighted as a decisive aspect. The improvements derived from rotating roles in the second experience could be interpreted as consequences of a reinforced effect of the fixed roles initially assumed. The need for future studies identifying deeper explanations is evident.

The findings of the current study suggest that, in socially vulnerable contexts, fixed roles report short-term benefits. However, it will be necessary to address prolonged studies in order to elucidate this aspect. With regard to intercultural terms, coincidences seem to support the literature's findings about the potential of the SEM in the promotion of positive relationships between peers of different ethno-cultural backgrounds, as well as in the development of prosocial attitudes such as help, respect and mutual recognition. However, it is appropriate to pose a series of limitations present in this study: (a) the research design, lacking a control group, (b) the concretion to a single teaching center and with classes taught by a single teacher and (c) the low sample size with respect to students of immigrant origin which leads to treat with caution the interpretations regarding to the mentioned subgroup.

Future research may reinforce trends, for example, by increasing the number of teachers in different teaching centers and in different contexts (e.g., students with experience with the model, centers of medium-high socioeconomic stratum, primary students, etc.). It is also important to emphasize that the intervention was carried out applying two sports of the same nature or tactical category, advocating for future interventions that consider this circumstance. It will be equally interesting to analyze additional variables that go beyond the social domain (game performance, motivation, etc.).

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