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ORIGINAL

PERSONAL AND SOCIAL RESPONSIBILITY, ACHIEVEMENT GOALS AND PERCEPTIONS OF SUCCESS IN PHYSICAL EDUCATION

RESPONSABILIDAD PERSONAL Y SOCIAL, METAS DE LOGRO Y PERCEPCIÓN DE ÉXITO EN EDUCACIÓN FÍSICA

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ABSTRACT

The aim was to analyze the possible effects of the application of the Teaching Personal and Social Responsibility (TPSR) pedagogical model on three variables: 2x2 Achievement goal orientation, Perception of success and Personal and social responsibility. We proceeded with a quasi-experimental design with three repeated measures: pre-implementation, post-implementation and follow-up measure, and the presence of an experimental group and a non-equivalent control group. The implementation was carried out in a Physical Education context. A total of 265 students (53% boys) aged between 8 and 12 years old. Two statistical techniques were conducted, using repeated measures ANOVA and ANCOVA. The results allow us to conclude that the implementation of TPSR is able to increase the Social Responsibility dimension, with a small effect size. The data do not allow us to conclude robust changes in the rest of the variables and dimensions studied.

KEY WORDS: pedagogical models, positive sport, inclusive society, values, Physical Education.

RESUMEN

El objetivo fue analizar los posibles efectos de la aplicación del Modelo del Responsabilidad Personal y Social (MRPS) en tres variables: Orientación de metas de logro 2x2, Percepción de éxito y Responsabilidad personal y social. Se procedió con un diseño cuasi-experimental de tres medidas repetidas: pre-implementación, post-implementación y medida de seguimiento, y presencia de un grupo experimental y de un grupo de control no equivalente. La implementación se llevó a cabo en un contexto de Educación Física. Participaron en el estudio un total de 265 estudiantes (53% varones) con edades comprendidas entre los 8 y los 12 años. Se utilizaron dos técnicas estadísticas, procediendo con ANOVA de medidas repetidas y con ANCOVA. Los resultados permiten concluir que la implementación del MRPS es capaz de incrementar la dimensión Responsabilidad Social, con un tamaño del efecto pequeño. Los datos no permiten concluir cambios robustos en el resto de las variables y dimensiones estudiadas.

PALABRAS CLAVE: modelos pedagógicos, deporte positivo, sociedad inclusiva, valores, educación física.

INTRODUCTION

We live in a society characterised by immediacy and the need to satisfy our personal demands as a matter of priority, where individualism and competitiveness have taken centre stage. In this context, we might reassert the educational system's role as agent of social transformation, offering a privileged framework for training critical and responsible citizens able to give an ethical response to these challenges. Physical Education, as a holistic discipline encompassing psychomotor, intellectual and social aspects, represents an exceptional medium in which to stimulate learning experiences based on respect, cooperation, empathy and solidarity, all of which values are catalysts for an inclusive society. Addressing this task may generate uncertainty among teachers, who need tools to safely meet this challenge, and this is where the Teaching Personal and Social Responsibility model (TPSR) devised by Donald Hellison (1978) comes into play.

The TPSR model is based on the idea that young people, through engaging in structured physical activities and sports, experience success and that this should serve as an opportunity for developing desirable personal responsibility and social behaviour. The model was conceived for application among underserved populations at risk of social exclusion, providing these young people with opportunities to develop their sense of responsibility and personal and social skills in order to eradicate conducts that are unhealthy from a physical, psychological and social point of view (Ibaibarriaga & Tejero, 2020).

This model is structured on five levels in which participating students progress in a flexible step-by-step manner, gradually learning to develop their personal

and social responsibility. Level 0 is characterised by irresponsible behaviour by students, justified by the actions of others. Level 1, or 'respect for the rights and feelings of others', is based on generating a climate of security within the classroom in which students may express themselves without fear and discrepancies are resolved through dialogue, respect and tolerance. Level 2, or 'participation and effort', promotes the active participation of students by means of stimulating activities that generate positive experiences, encouraging effort and a favourable attitude toward work. Level 3, or 'personal autonomy', is geared toward building decision-making capabilities and independence. Level 4, or 'helping others and leadership', develops empathy and leadership skills with a moral commitment, taking into account the needs and wellbeing of others without expecting anything in return. And Level 5, or 'transference', seeks to apply the knowledge learned in the previous levels in the various aspects of students' personal lives regardless of the context in which they find themselves.

Since it was designed, the TPSR model has been applied to different populations and contexts to propitiate the acquisition of values that promote human dignity, strengthening comprehensive development and the establishment of positive relationships among people (Hellison, 2011). In the field of Physical Education at schools, many studies have shown the effectiveness of TPSR on participants in several variables such as personal and social responsibility (Cryan & Martinek, 2017), the development of a healthy lifestyle (Diedrich, 2014), fair play (Keske & Gürsel, 2017), social and emotional learning (Andrew et al., 2019), enhanced academic results (Hayden et al., 2012), reduced school absenteeism (Wright et al., 2010), levels of physical activity and the practice of sports (Gómez-Mármol et al., 2017), indices of autonomy, respect and participation (Sánchez-Alcaraz et al., 2019), the drive to be physically active and sportsmanship (Merino-Barrero et al., 2019), self-determination, classroom climate and pro-social behaviour (Manzano-Sánchez et al., 2021) and a reduction in disruptive behaviours (Sánchez-Alcaraz et al., 2021)

In the school context, students' motivation takes on a prominent role in achieving success in the implementation of educational programmes, motivation being understood as the set of internal forces that respond to certain stimuli that arise from different situations and that direct and keep us focused on the target of an activity (Pintrich & Schunk, 2006). In the framework of Physical Education at schools, the Achievement Goal Theory (Nicholls, 1989) is one of the most widely used in understanding the different factors associated with students' motivations. This theory is structured on the two principal dimensions found in achievement environments: on the one hand, a dimension oriented toward the task, mastery or learning, in which the term 'goal' refers to an improvement in personal skills; and on the other hand, a dimension focusing on the ego or performance, in which the term 'goal' implies preoccupation with normative competence.

In addition, the Achievement Goal Theory has evolved since the original dichotomous model into other models such as that proposed by Elliot and McGregor (2001) on 2x2 achievement goals, in which the constructs 'mastery goal' and 'performance goal' are split into approximation goals and avoidance

goals. Within this framework, the perceived performance may differ depending on two dimensions (Méndez-Giménez et al., 2013): definition (intrapersonal or normative reference) and valence (positive or negative possibility). Thus, combining these two dimensions we obtain four achievement goal types: *Mastery-Approach goal* (relating to the traditional perspective of mastery or task oriented goal, centred on achieving intrapersonal competence), *Mastery-Avoidance goal* (oriented toward dodging the lack of improvement and learning, focusing on avoiding intrapersonal incompetence), *Performance-Approach goal* (which corresponds to the traditional perspective of performance or ego goals, where the objective is to approach the normative competence out-performing the rest of the group) and *Performance-Avoidance goal* (keeping from performing worse than others, focusing on avoiding normative incompetence).

Similarly, different research studies have shown that students' orientation toward the task in hand is positively related to responsibility conducts (Guan et al., 2006), such that the highest levels of personal and social responsibility are positively linked to an orientation toward the highest task-oriented motivation (Martins et al., 2017). This task-orientation generates positive affective feelings in students toward their class, having fun, the ability to cooperate, affiliation and social responsibility (Méndez-Giménez et al., 2013), higher levels of responsibility being shown in girls than in boys (Cecchini et al., 2011). Likewise, with regard to 2x2 Achievement Goals, the study conducted by Méndez-Giménez et al. (2018) showed that students who characteristically present Mastery-Approach achievement goals are better prepared for taking on social responsibilities within the Physical Education class. This Mastery-Approach goal, and the Performance-Approach goal, present positive relations toward personal and social responsibility, while only the Mastery-Approach goal serves to predict personal and social responsibility behaviours (Agbuga et al., 2015).

From here, in view of previous research, the aim of this study is to analyse the possible effects of implementing the Personal and Social Responsibility Model in three variables: 2x2 achievement goal orientation, perception of success and personal and social responsibility, all in the context of Physical Education in Primary Education.

METHOD

Participants, design and ethics of the study

A total of 265 students took part in the study (53% male) aged between 8 and 12 years, in 4th or 5th year of Primary School at educational centres in the Autonomous Community of Madrid (Spain). Groups were established according to subjects' natural classroom distribution, which is a common procedure in educational research situations that take place in real contexts, with natural groups, where groups are already formed in classrooms and cannot be altered randomly (Pérez & Delgado, 2004).

We conducted a quasi-experimental design with three repeated measures, in the presence of an experimental group (n = 220, stemming from nine natural

groups taken from five educational centres) and of a non-equivalent control group (*n* = 45, stemming from two natural groups taken from one educational centre). Similarly, seven teachers were involved (six in the experimental group and one in the control group), all of whom were civil service teaching staff specialised in Physical Education, of ages ranging from 32 to 50 years and with 9 to 28 years' professional experience. The selection of participant schoolchildren was determined by the composition of the natural groups at the participating teachers' centres of reference. In turn, teachers were selected through incidental sampling involving four inclusion criteria (Heinemann, 2003): (1) being directly engaged in Primary Education teaching at a public-funded school, (2) participation in a training course in aspects related with the TPSR model, (3) continuity during three consecutive school years at the same educational centre, and (4) being authorised by the School Council and the School Management to implement the TPSR programme.

Before commencing the study, permission was asked of the Management Team and the School Council of each school, as governing bodies representing all the educational community agents (teachers, families and administration). Likewise, this research was approved by the Ethical Committee of the universities the authors belong to.

Procedure and implementation of the TPSR programme

To begin with, before implementing the TPSR programme, the participant teachers were given a training course on the conceptual framework and strategies for implementing the programme, structured in five blocks of content: (1) levels of responsibility, (2) work session model, (3) implementer teacher profile, (4) teaching strategies for responsibility and conflict-solving, and (5) training in social and communication skills. This training course was of a theoretical-practical nature and had a duration of 50 hours.

Subsequently, in the experimental group an intervention programme was carried out based on the TPSR model over a full school year (9 months). Specifically, TPSR was applied with a frequency of three sessions per week, for 45 to 60 minutes per session, within the subject of Physical Education. At the beginning of this intervention, the teachers dedicated one week (3 sessions) to explaining to students the main characteristics of the TPSR they were going to take part in, familiarising them with the programme work dynamic. Implementation was gradual, starting at level 1 (respect for the rights and feelings of others). According to how each group progressed, subsequent levels were addressed, introduced and developed in teaching units proposed by the teachers in their class planning processes. On this particular, the principle of autonomy was respected allowing each teacher freedom to select syllabus items for their teaching units in order to avoid interfering in their adaptation of said units to the specific contexts at each school (sports facilities and material resources available). This resulted in a total of nine teaching units throughout the implementation of the programme.

Additionally, in parallel to the implementation of the model, the teaching body received a continuing training programme with the aim of coordinating the

intervention programme and solving any potential issues or queries. Similarly, in order to verify the degree of fidelity and adherence to the principles of the TPSR model, 24 audiovisual recordings were made (four per teacher in the experimental group) throughout the implementation.

To identify the effects caused by applying the programme, three measures were taken, at three different moments in the study: pre-implementation measure (month 0, September), post-implementation measure (month 9, May) and follow-up measure (month 14, October in the following year).

Variables and instruments

Fidelity of implementation of the TPSR model

Fidelity of implementation was analysed using the Tool for Assessing Responsibility-based Education (TARE), version 2.0 (Escartí et al., 2015). This instrument was designed by Wright & Craig (2011) and validated for the Spanish context by Escartí et al. (2013) under the name *Instrumento de observación de las estrategias del profesorado para enseñar responsabilidad*. The TARE 2.0, on a 5-point Likert-type scale (0 = not at all, 4 = always), evaluates the frequency of teaching strategies in different sections. Among others, the key components of the Teaching Personal and Social Responsibility model: integration (degree to which the teacher integrates the level of personal and social responsibility in physical activity), transference (degree to which the teacher establishes connections between the levels of responsibility and their application in other contexts and situations), empowerment (degree to which the teacher shares responsibilities with students) and teacher-student relationships (degree to which the teacher treats students with respect, offers students opportunities for making choices and gives them voice).

Personal and Social Responsibility

The instrument *Personal and Social Responsibility Questionnaire* (PSRQ) was used, originally designed by Li et al. (2008), in its version adapted to Spanish by Escartí et al. (2011). This questionnaire consists of 14 items, distributed equally between two factors: Social Responsibility and Personal Responsibility. The Social Responsibility factor is made up of two dimensions: respect for the rights and feelings of others (three items, such as: “Respect toward my teachers”) and assistance to others and leadership (four items, such as: I am helpful to others”). Moreover, the Personal Responsibility factor is similarly composed of two dimensions: participation and effort (four items, such as: “I try hard”) and personal autonomy (three items, such as: “I set myself goals”). As for the response scale, participants are asked to respond on a six-point Likert scale, ranging from (1) totally disagree to (6) totally agree.

Students’ perception of success in Physical Education classes

The instrument used was *Perception of Success Questionnaire* (POSQ), specifically the scale designed by Roberts and Balagué (1991) in its Spanish

version, known as *Cuestionario de Percepción de Éxito* (Cervelló et al., 1999). This questionnaire contains 12 items, six of which address the factor *student task orientation* (for instance: "in Physical Education class I feel successful when I overcome difficulties"; and a further six items deal with the factor *student ego orientation* (for instance: "in Physical Education class I feel successful when I am the best". Answers to the questionnaire are given on a five-point Likert scale ranging from (1) totally disagree to (5) totally agree.

2x2 Achievement Goal Orientation

The instrument used was *Achievement Goal Questionnaire-Physical Education (AGQ-PE)*, specifically the Spanish version by Moreno et al. (2008) of the adaptation to Physical Education by Guan et al. (2006) and Wang et al. (2007) of the original 2x2 Achievement Goat Questionnaire developed by Elliot & McGregor (2001). The scale is structured in 12 items grouped by four factors, each encompassing three items. The first factor is Mastery-Approach (for instance: "I want to learn as much as possible"). The second factor is Mastery-Avoidance (example: "I often worry that I cannot learn everything I should learn"). The third factor is Performance-Approach (example: "it is important for me to do better than other students"). The remaining factor is Performance-Avoidance (example: "my fear of performing badly is often what motivates me"). All these items are preceded by the phrase "in Physical Education class". Answers are given on a Likert-type scale from (1) totally disagree to (7) totally agree.

Pilot study of instruments

Before conducting the study, the instruments described above were subjected to a pilot study. To test Fidelity of Implementation for the TPSR model (TARE 2.0), inter-rater reliability was established with two observers using two videos similar to those incorporated in the study, analysing the intraclass correlation coefficient. In the case of the three scales: Personal and Social Responsibility, Perception of Success and 2x2 Achievement Goals, a test-retest reliability analysis was run. The measures were taken seven days apart on a sample of 93 individuals of ages between 9 and 11 years. Internal consistency reliability was estimated with Cronbach's alpha coefficient (α). Temporal stability reliability was estimated by means of the intraclass correlation coefficient (ICC).

Data analysis

Descriptive and inferential statistics were used for this task. In order to ascertain the robustness of the possible changes, it was decided to contrast two statistical techniques. On the one hand, a factorial ANOVA with repeated measures was conducted both for the control group and the experimental group, and the results compared among the three measures (pre, post and follow-up). On the other hand, an ANCOVA was carried out for a comparison between the control group and the experimental group in the follow-up measure, but introducing as a variable the fit of the pre-measure results (with the intention adjusting any possible initial differences among groups). Where statistically significant

differences were found, the effect size was estimated by partial eta squared (η^2_p), taking as reference the cut-off points suggested by Cárdenas and Arancibia (2014): small effect (0.010), medium effect (0.060) and large effect (0.160). Estimates were made with the software *IBM SPSS Statistics 26* (IBM Corporation USA). The confidence level was established at 95% ($p < 0.50$).

RESULTS

Table 1 shows the results of the pilot study. With the programme fidelity instrument (TARE 2.0), a high mean reliability was observed among observers for all categories, with an intraclass correlation coefficient of 0.860 ($p < 0.001$). As for the remaining instruments: Personal and Social Responsibility, Perception of Success and 2x2 Achievement Goals, the alpha reliability coefficients reached values exceeding 0.70, except for the Mastery-Approach factor ($\alpha = 0.621$), and the intraclass correlation coefficients reached a temporal reliability of between 0.760 and 0.864 ($p < 0.001$).

Table 1. Pilot test results

Instruments	Factors	No. Items	Reliability	
			α	*ICC*
Fidelity of implementation	All categories	—	—	0.860
Personal and social responsibility	Social responsibility	7	0.713	0.848
	Personal responsibility	7	0.778	0.864
Perception of success	Ego orientation	6	0.863	0.826
	Task orientation	6	0.826	0.877
2x2 Achievement goals	Performance approach	3	0.806	0.818
	Mastery approach	3	0.621	0.835
	Performance avoidance	3	0.844	0.835
	Mastery avoidance	3	0.730	0.760

α = Cronbach's alpha coefficient, *CCI* = Intraclass correlation coefficient

Table 2 displays the results of programme follow-up or fidelity in the four key components of the TPSR model: integration, transference, empowerment and teacher-student relations. Low values were observed in transference ($M = 0.41$; $SD = 0.46$) and empowerment ($M = 0.75$; $SD = 0.35$), a medium value for integration ($M = 2$; $SD = 0.88$) and a medium-high value for teacher-student relations ($M = 2.79$; $SD = 0.53$).

Table 2. Fidelity or follow-up of key components of the TPSR

Key components	*N*	*M*	*SD*
Integration	24	2	0.88
Transference	24	0.41	0.46
Empowerment	24	0.75	0.35
Teacher-student relations	24	2.79	0.53

N = number of sessions observed, *M* = arithmetic mean, *SD* = standard deviation.

Table 3 presents the results of the control group in the pre, post and follow-up measures. In a repeated measures ANOVA test, on comparing pre- and post-implementation measures, a variation was observed in the dimension Task

Orientation (F = 5.821; p = 0.022; η^2_p = 0.150), and in the dimension Mastery-Approach (F = 4.028; p = 0.023; η^2_p = 0.130). In the comparison between pre- and follow-up measures, no differences were observed and no previous changes were maintained over time (in all cases p > 0.05).

Table 3. Control group. Repeated measures factorial ANOVA test

Variables	Pre (n = 42)		Post (n = 34)		Follow-up (n = 32)		Pre-Post (n = 29)		Pre-Follow-up (n = 26)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*P*	η^2_p	*P*	η^2_p
Personal and social responsibility										
Social responsibility	4.37	1.12	4.48	1.10	4.42	0.71	1	—	1	—
Personal responsibility	4.79	0.98	4.98	1.08	4.94	0.64	0.222	—	0.644	—
Perception of success										
Ego orientation	3.47	1.17	3.35	1.11	3.11	1.12	0.615	—	0.119	—
Task orientation	3.64	0.60	3.99	0.41	3.82	0.43	**0.022***	**0.150**	0.122	—
2x2 Achievement goal orientation										
Performance approach	4.76	1.85	4.62	1.85	4.16	1.76	1	—	0.339	—
Mastery approach	5.78	1.22	6.36	0.67	5.82	1.01	**0.023***	**0.130**	1	—
Performance avoidance	4.90	1.70	5.08	1.66	5.07	1.38	1	—	1	—
Mastery avoidance	4.90	1.81	5.40	1.19	4.91	1.54	.882	—	1	—

M = Arithmetic mean, *SD* = Standard deviation, *P* = probability of statistically significance in a general linear model repeated measure factorial ANOVA, η^2_p = partial eta squared effect size.

Table 4 shows the results of the experimental group in the pre-, post- and follow-up measures. In a factorial repeated measures ANOVA, on comparing pre- and post-implementation measures, differences were observed in two dimensions: Ego Orientation (F = 5.435; p = 0.019; η^2_p = 0.045) and Performance-Approach (F = 13.454; p < 0.001; η^2_p = 0.063). Neither of these two pre-post differences were maintained on comparing pre-follow-up measures (p > 0.05), nevertheless, pre-follow-up differences appeared in four dimensions: Social Responsibility (F = 4.250; p = 0.018; η^2_p = 0.028), Personal Responsibility (F = 4.035; p = 0.010; η^2_p = 0.027), Task Orientation (F = 5.017; p = 0.013; η^2_p = 0.029) and Performance-Avoidance (F = 3.265; p = 0.048; η^2_p = 0.034).

Table 4. Experimental group. Single-factor repeated measures ANOVA test

Variables	Pre (n = 218)		Post (n = 186)		Follow-up (n = 173)		Pre-Post (n = 179)		Pre-Follow-up (n = 161)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*P*	η^2_p	*P*	η^2_p
Personal and social responsibility										
Social responsibility	4.83	0.80	4.82	0.71	4.96	0.64	1	—	**0.018***	**0.028**
Personal responsibility	4.99	0.70	5.06	0.71	5.14	0.63	0.927	—	**0.010***	**0.027**
Perception of success										
Ego orientation	3.09	1.03	3.30	0.99	3.15	0.94	**0.019***	**0.045**	0.572	—
Task orientation	3.87	0.53	3.94	0.45	4.00	0.37	0.436	—	**0.013***	**0.029**
2x2 Achievement goal orientation										
Performance approach	3.98	1.71	4.48	1.74	4.00	1.63	**<0.001***	**0.063**	1	—
Mastery approach	6.08	0.95	6.04	0.84	6.16	0.76	0.609	—	0.846	—
Performance avoidance	4.75	1.47	4.85	1.37	5.05	1.17	0.545	—	**0.048***	**0.034**
Mastery avoidance	4.98	1.45	5.00	1.39	5.11	1.25	0.933	—	0.791	—

M = Arithmetic mean, *SD* = Standard deviation, *P* = probability of statistically significance in a general linear model repeated measure factorial ANOVA, η^2_p = partial eta squared effect size.

Table 5 indicates the results of comparing the control group and the experimental group in the follow-up measure with an ANCOVA test, after entering as a control variable the results of the pre-implementation measure. Differences were observed in two dimensions: Social Responsibility, with a small effect size (F = 9.424; p = 0.002; η^2_p = 0.047), and Mastery-Approach, likewise with a small effect size (F = 5.372; p = 0.021; η^2_p = 0.024).

Table 5. Comparison between groups in the follow-up measure. ANCOVA test

	Control (n = 32)		Experimental (n = 173)		P	η^2_p
	M	*SD*	*M*	*SD*		
Personal and social responsibility						
Social responsibility	4.40	0.88	4.95	0.63	**0.002***	**0.047**
Personal responsibility	5.04	0.68	5.13	0.62	0.955	—
Perception of success						
Ego orientation	2.97	1.23	3.14	0.93	0.111	—
Task orientation	3.85	0.45	4.00	0.37	0.106	—
2x2 Achievement goal orientation						
Performance approach	4.16	1.76	4.00	1.63	0.365	—
Mastery approach	5.72	1.32	6.18	0.73	**0.021***	**0.024**
Performance avoidance	5.01	1.53	5.07	1.20	0.697	—
Mastery avoidance	4.92	1.68	5.12	1.27	0.373	—

P = probability of statistically significance in general linear model ANCOVA test with adjustment or control of the pre-intervention measure, η^2_p = partial eta squared effect size.

DISCUSSION

The aim of this study was to analyse the effect of implementing a programme based on the TPSR model among Physical Education students in Primary School, in relation to their personal and social responsibility, perception of success and orientation toward 2x2 achievement goals.

In the case of the variable Personal and Social Responsibility, the findings indicate that the intervention generated significant effects in the experimental group, if we compare their progress over time, between the pre-measure and the follow-up measure. However, on comparing the experimental group to the control group regarding the follow-up measure, having adjusted the pre-implementation measure, changes were only observed in the social responsibility dimension, in favour of the experimental group. Therefore, we may state that behaviours linked to Social Responsibility increased after completing the programme, unlike those linked to Personal Responsibility. The results coincide with Cryan and Martinek (2017), in whose study only the Social Responsibility dimension registered a significant increase, but differ from other research in the field of Physical Education in schools (Manzano-Sánchez et al., 2019; Manzano-Sánchez et al., 2021; Merino-Barrero et al., 2019), where a positive influence was noted in Social Responsibility and Personal Responsibility alike.

Regarding the variable Perception of Success, the implementation of the programme did not generate significant effects among the schoolchildren in the experimental group. Indeed, in the comparison between the three measures

changes were observed in the goal orientation toward the task; however, on comparing these results with the control group, said differences were not maintained. In other words, after comparing the results of the two statistical techniques employed, single factor repeated measures ANOVA and ANCOVA, it is not possible to claim that significant and robust changes occurred in the variable perception of success. This fact is similar to findings for the variable 2x2 Achievement Goal Orientation, where positive changes were appreciated in the experimental group in all three measures for the Performance-Avoidance goal; however, on comparing the experimental and control groups for the follow-up measure, differences were only observed in the Mastery-Approach goal. Thus, triangulation of the results obtained from the two statistical techniques used does not support the conclusion that the intervention programme generated robust changes in students' achievement goal orientation.

With a view to discussing our results with previous research, we have not found studies testing the effectiveness of the TPSR model on the Perception of Success and 2x2 Achievement Goals, but there is empirical evidence of the positive impact of the TPSR model on other psychological variables. Examples of such variables are the following: self-control (Cecchini et al., 2003), motivation (Prat et al., 2019), self-efficacy (Pan et al., 2019), autonomy (Sánchez-Alcaraz et al. 2019; Valero-Valenzuela et al., 2019), motivational classroom climate (Caballero, 2015), satisfaction of basic psychological needs (Manzano-Sánchez & Valero-Valenzuela, 2019), self-determined motivation (Merino-Barrero et al., 2019) and resilience (Manzano-Sánchez et al, 2021). The results and empirical evidence demonstrate the effectiveness of the TPSR model as a pedagogical intervention tool in the educational context of Primary School.

With regard to the Fidelity of Implementation for the TPSR programme, the most salient key components were teacher-student relations and integration, indicating that fluid communication between teachers and student groups was characterized by a relationship based on respect in which learning scenarios were created that were inclusive for all participating students. It is important to highlight the scarce presence of the components 'empowerment' and 'transference', a circumstance that features as a constant in previous research (Andrew et al., 2017; Camerino et al., 2019; Carreres, 2014; Escartí et al., 2015; Wright & Irwin, 2018). This suggests that, when intervention with the TPSR model is conducted in Physical Education classes, there is greater difficulty when it comes to teaching content explicitly geared toward transference to other aspects of life. Research such as the work of Escartí et al. (2018) argues that the fact that transference, in most studies, is the strategy carrying the lightest weight has to do with the sequential arrangement of the five levels within the TPSR model, transference featuring on the last –hence, the least exercised- level. Similarly, in the course of the teaching sessions, transference is chiefly dealt with in the reflection processes usually conducted at the beginning and end of the sessions, which are quantitatively shorter in terms of time. For these reasons, it is necessary to train teachers in specific skills so that, when implementing the model, greater protagonism can be given to these two strategies: empowerment and transference.

It should also be mentioned that the instruments used in this study are reliable when applied to Primary School schoolchildren aged 8 to 12 years. The various dimensions on the scales were found to be reliable, surpassing the reliability value of 0.70 proposed by Nunnally and Bernstein (1994). Only the dimension Mastery-Approach evidenced weak reliability in its internal consistency (α = 0.621), although it should be noted that this dimension is configured with a small number of items (no. of items = 3) and, in addition, yielded a high value for temporal reliability (ICC = 0.835).

Nevertheless, a limitation in this research was the high mortality in the sample during the fourteen months of the study. This situation reflects the reality and particularities of population at the educational centres at which the research was conducted, characterized by family or labour related migratory movements, changes of address and, in too many cases, high levels of school absenteeism. The study was thus subjected to intense variability in the natural composition of the groups, which ultimately caused a reduction in the sample size, most especially in the follow-up measure taken after the summer break.

CONCLUSIONS

The implementation of an intervention programme based on the TPSR model in Primary Education, in the activity of Physical Education, has produced significant improvements in the participant students' social responsibility, while no relevant changes have been observed in these schoolchildren's perception of success or 2x2 achievement goal orientation.

During the application of the TPSR model, the programme's effectiveness was closely conditioned by teachers' fidelity of implementation to the original patterns for this model (Lee & Choi, 2015). Throughout this study, the teachers displayed exemplary respect towards students, granting them opportunities for success, in appropriate teacher-student and inclusive relations. However, teachers had few occasions for sharing responsibilities for empowerment with the schoolchildren or focusing on transference.

It is fair to say that the instruments used in this study are reliable for evaluating student populations in 4th and 5th year of Primary Education. This allows for the replication of this research or the design of further studies. For example, future lines of research might undertake a more in-depth study of the effects of the TPSR model on Perception of Success and 2x2 Achievement Goal Orientation, in which it would be of interest to verify whether similar results are obtained in both Primary Education and Secondary Education.

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