

1 **Comparing effects of a TPSR training program on prospective physical**
2 **education teachers' social goals, discipline and autonomy strategies in**
3 **Spain, Chile, and Costa Rica**

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Abstract

Background: Conflict prevention, respect, tolerance and acceptance of others should be basic outcomes in any educational context. Physical Education has the potential to be one of the curricular subjects that could help students meet these goals. However, teachers need to use appropriate instructional approaches like Teaching for Personal and Social Responsibility (TPSR).

Purpose: The objectives of the present study were two: (1) to compare the impact of TPSR training on social goals, discipline strategies and autonomy support of future PE teachers from Spain, Chile and Costa Rica; and (2) to assess participants' perceptions of their country's social, cultural and curricular aspects that may influence TPSR implementation.

Participants and settings: 156 prospective Physical Education teachers (48 from Spain, 54 from Chile and 54 from Costa Rica), with an average age of 21.41 ± 2.57 years, agreed to participate. 88 (54%) were males, while 75 (46%) were female. They were enrolled in teacher training programs in three different universities located in three different countries: a) Faculty of Education of the University of Burgos (Spain); b) Nursery School of the University of Valparaiso (Chile); and c) School of Physical Education and Sports of San José (Costa Rica). All students experienced the same TPSR intervention program, conducted by the same university teacher.

Research design: The study followed a quasi-experimental, pre-test / post-test non-equivalent research design with mixed methods.

Data collection: Three validated questionnaires were used to obtain quantitative information from the participants before and after the training program. Qualitative information was obtained from three discussion groups conducted with the participating students (one from each country).

Data analysis: Statistical analysis of quantitative data was conducted with the statistical package SPSS (version 22.0), while content analysis and constant comparison were used to assess qualitative data.

Findings: The prospective PE teachers from the three countries held different views of the effects of the TPSR program on social goals, discipline strategies and autonomy support, and they were based on socio-cultural considerations of the subject (PE), the teachers' academic training and their professional identity as teachers on each country. Spanish and Costa Rican PE teachers demonstrated a significant positive change in their perspectives on discipline strategies, and Chilean PE teachers demonstrated a significant positive change in their perception of social goals after experiencing a TPSR intervention.

Conclusion: If cultural context is considered, TPSR can be an effective teacher training approach related to discipline strategies, social goals and autonomy support in PE.

Keywords: Personal and social responsibility; Pedagogical model; social goals; discipline; autonomy; cooperative learning

1 **Introduction**

2 Conflict prevention, respect, tolerance and acceptance of others should be basic outcomes in
3 any educational context, and all teachers should strive to develop them in their students.
4 Physical Education (PE), body and movement, has the potential to be one of the curricular
5 subjects that could help students meet these goals (Doolittle and Rukavina 2014; Jacobs,
6 Knoppers and Webb 2013). Unfortunately, its areas of concern vary from country to country.
7 In Spain, social goals, discipline and autonomy support are three key elements in current PE
8 practices (Molina 2012). In Chile, PE practices tend to focus on students' health, creativity,
9 and problem-solving skills (Pill and SueSee 2017). Finally, in Costa Rica or Mexico,
10 performance in sport and physical activity and authority are the main areas of concern in PE
11 (Jennings-Aburto et al. 2008).

12 Teachers need to use appropriate instructional approaches to achieve the expected positive
13 outcomes (Kirk 2013; Stolz and Kirk 2015), and one of them has shown, internationally, the
14 most positive results in students' social development: Teaching for Personal and Social
15 Responsibility (TPSR) (Poza, Grao-Cruces and Pérez-Ordás 2018). It was originally created
16 by Hellison (1978) to generate a solid personal and social foundation through work in the
17 students' physical and motor domains. The aim was to generate basic personal and social
18 skills on each individual through sport practice, which will allow him/her to integrate into
19 society in a satisfactory manner (Hellison 1995), pursuing four goals: self-esteem, self-
20 actualization, self-understanding and interpersonal relationships. The main characteristic of
21 the model is its structure in five levels of responsibility: Level 1: Respect for the rights and
22 feelings of others; Level 2: Participation and effort; Level 3: Self-direction; Level 4: Helping
23 others and leadership; and Level 5: Transfer outside the gym. This last level connects with the
24 previous four, integrating the implementation of the responsibility acquired outside the
25 classroom. One of the most positive aspects of this model is its applicability to diverse
26 contexts and contents (Diedrich 2014), including its successful hybridization with other
27 pedagogical models such as Sport Education (Fernández-Rio and Menéndez-Santurio 2017).
28 TPSR has been mostly implemented with adolescents, but the benefits have also been shown
29 in the early stages of education (Graeme 2014). Finally, other studies have shown the benefits
30 in students' learning and that when teachers experience this model, they turn to it (Cryan and
31 Martinek 2017). Gordon and Doyle (2015) highlighted the benefits of the model, both for
32 students and teachers. The question that this research tries to answer is whether this model can
33 have relevance in initial teacher training (ITT) in different cultural contexts.

34 There seems to be a direct connection between the pedagogy that pre-service teachers receive
35 in the early stages of their training and the methodological approach that they will use in their
36 professional practice (Jenkins 2014). This idea is even more important in PE, since there is a
37 dichotomy about the type of educational and corporal approach that the subject must have
38 (Stolz and Kirk 2015). However, what seems to be coherent is that, in such a diverse and
39 plural society, the promotion and practice of physical activity must also include positive
40 social behaviors. Nonetheless, sports practice itself does not generate good or bad attitudes
41 and values, but it is rather the educational approach and the global conception of teaching that
42 are the true determinants (Harvey and O'Donovan 2013). Therefore, it is worthwhile to ask
43 two questions: a) how to achieve a good relational climate in the PE classroom; and b) how to
44 make that situation lead to students' positive motor experiences. These two aspects are the
45 main causes of students performing autonomous physical activity outside the classroom,
46 mainly due to motivational factors (Beni, Fletcher and Ni Chróinín 2017).

47 The connection between motivation and meaningful experiences in sport has been called the
48 Trans-Contextual model (Hagger and Chatzisarantis 2016). To promote this model in PE,
49 teachers must try to connect physical activity practice that involves significant learning with
50 the need to work in groups to achieve common goals (Lund 2013). That is why PE teachers

1 should not only direct their efforts to improve their students' motor performance, but also to
2 perform tasks with social relevance that will allow them to develop autonomous task
3 regulation, to be involved in their own assessment, and to be aware of the acquired learning
4 (Hortigüela, Fernández-Río and Pérez-Pueyo 2016). The TPSR approach is one pedagogy that
5 can help teachers do all these things. The benefits of the TPSR, its sustainability and
6 development, can be extended only if future PE teachers perceive it as meaningful when they
7 are in their ITT. Finally, there is a need to assess TPSR's applicability internationally,
8 acknowledging the influence of context and sociocultural environment when put into practice.
9 Jung and Wright (2012), in a study conducted in South Korean students, found that the
10 concept of self-direction was challenging to understand and endorse for them, due to
11 differences in cultural and educational schemes. However, more research is needed to address
12 cultural differences among countries, and how they influence the implementation of a
13 curricular approach like TPSR.

14 Even though there is varied literature related to TPSR implementation in compulsory
15 education, no studies have been undertaken in ITT or contrasting its implementation in
16 different countries. Therefore, the objectives of the study were: (1) to compare the impact of
17 TPSR training on social goals, discipline strategies and autonomy support of future PE
18 teachers from Spain, Chile and Costa Rica; and (2) to assess participants' perceptions of their
19 country's social, cultural and curricular aspects that may influence TPSR implementation.

21 **Material and method**

23 *Participants*

24 156 prospective PE teachers (48 from Spain, 54 from Chile and 54 from Costa Rica), with an
25 average age of 21.41 ± 2.57 years, agreed to participate. 88 were males (54%) and 75 females
26 (46%). They belonged to three different universities located in three different countries: a)
27 Faculty of Education of the University of Burgos (Spain); b) Nursery School of the University
28 of Valparaiso (Chile); and c) School of Physical Education and Sports of San José (Costa
29 Rica). A comparison was established between three student groups belonging to three
30 different ITT institutions: one focused on Primary Education General Teachers (Spain), one
31 focused on Early Childhood Teachers (Chile) and one focused on PE Specialist Teachers
32 (Costa Rica). However, the three groups were being trained to be Primary Education PE
33 specialist teachers in their respective countries. All students experienced the same
34 intervention program based on TPSR, conducted by the same teacher: male, 32 years old, 7
35 years of ITT experience, research specialist in pedagogical models.

37 *Design and procedure*

38 The study followed a quasi-experimental, pre-test / post-test non-equivalent research design
39 with mixed methods. Three validated questionnaires were used to obtain quantitative
40 information from the participants before and after experiencing the same 10-session TPSR
41 intervention program (one-hour theory, two-hour practice). The aim was to assess prospective
42 PE teachers' ideas on social goals, discipline strategies and autonomy support, and assess
43 TPSR usefulness and viability for their teaching. Table 1 shows a brief description of the 10
44 sessions conducted.

46 [INSERT TABLE 1 HERE]

49 The program's format followed four of the five-part structure proposed by Hellison (2011):
50 (a) Relational Time, (b) Awareness Talks, (c) Physical Activity Plan, and (d) Group Meetings.
51 The fifth part of the model, reflection and self-evaluation, was only partially followed.

1 Participants reflected in the group meetings, but they did not self-evaluated their personal and
2 social responsibility, because it was not necessary. The goal of the training program (table 2)
3 was to help prospective teachers understand the model not to assess their behaviours.
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6 [INSERT TABLE 2 HERE]
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10 A cooperative games and challenges learning unit was used to show the TPSR program to the
11 participating prospective teachers because of the different connections between both models.
12 Firstly, “the third essential component of cooperative learning is individual accountability”
13 (Johnson and Johnson 1994, 23). Moreover, personal responsibility is needed “to achieve the
14 group’s goals” (Dyson and Casey 2012, 3). Second, “Cooperation as a dimension of effort...
15 can be viewed as the beginning stage of responsibility development” (Hellison 2011, 21).
16 Therefore, both models seek to promote similar social goals. The third and final connection
17 between both models can be observed in the “group assembly” idea (Fernandez-Rio 2014).
18 Cooperative learning includes group processing among one of its basic features, and TPSR
19 group meetings. Both have the same goal: focus students’ attention and help them reflect and
20 discuss. Based on the aforementioned, cooperative learning and TPSR could be considered
21 complementary pedagogical models with positive connections between them.
22

23 ***Instruments***

24 *Quantitative*

25 *Social goals questionnaire.* The Social Goal Scale in Physical Education (SGS-PE; Guan,
26 McBride and Xian 2006), validated to the Spanish context by Moreno et al. (2007) was used.
27 The answers were collected on a Likert-type scale, whose scoring ranged from 1 (totally
28 disagree) to 7 (totally agree). The questions were preceded by the following introduction: "In
29 my PE classes ...". It consists of 11 items grouped into two factors, a) Social Relationship (six
30 items): i.e., "I would like to have a friend to trust"; b) Social Responsibility (five items): i.e.,
31 "I try to do what the teacher asks". The goal was to understand the participating prospective
32 teachers’ views on teaching positive social behaviours, and whether those views changed as a
33 result of the intervention, with the idea of applying it to their students at school. A high FC =
34 .82, a VME higher than .50 (50.32%), and Cronbach's alphas of .80 and .76, respectively,
35 were obtained. A confidence level of 95% was used.
36

37 *Strategies to maintain discipline.* The Spanish version (Moreno et al. 2008) of the Strategies
38 to Sustain Discipline Scale questionnaire (Papaioannou, Tsigilis, Kosmidou and Milosis
39 2007) was used. It consists of 27 items grouped into four factors, a) Strategies identified (10
40 items): i.e., "The teacher helps us understand others"; b) Intrinsic strategies (six items): i.e.,
41 "The teacher attracts our attention and teaches us new skills and games"; c) Introjected
42 strategies (5 items): i.e., "The teacher makes us feel ashamed if we are undisciplined; d)
43 Indifference strategies (6 items) i.e., "The teacher is not interested in discipline in class. All
44 questions were preceded by the following introduction: "The physical education teacher ...".
45 The answers were collected on a Likert-type scale, whose scoring ranged from 0 (Strongly
46 disagree) to 10 (Strongly agree). The goal was to understand the participating prospective
47 teachers’ views on maintaining discipline, and whether those views changed as a result of the
48 intervention, with the idea of applying it to their students at school. A high FC = .83, a VME
49 slightly lower than .50 (48.39%) and Cronbach alphas of .85, .88, .75 and .77, respectively,
50 were obtained. A confidence level of 95% was used.

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Autonomy Support

The Perceived Autonomy Support Scale for Exercise Settings (Hagger et al. 2007), validated for Spanish context by Moreno, Parra and González-Cutre (2008) was used. It consists of 12 items that are merged into a single factor, teacher's autonomy support (i.e.: My teacher makes sure I understand why I have to do physical or sports exercise in my free time). All questions were preceded by the following introduction: "In my PE classes ...". The responses were collected on a Likert-type scale, whose scoring ranged from 1 (*totally disagree*) to 7 (*totally agree*). The goal was to understand the participating prospective teachers' views on autonomy support, and whether those views changed as a result of the intervention, with the idea of applying it to their students at school. A high FC = .84, a VME slightly higher than .50 (50.19%) and a Cronbach's alpha of .79 were obtained. A confidence level of 95% was applied.

An exploratory factor analysis was conducted with the three instruments, and it revealed a three-factor solution with a self-value greater than one. These three factors explained the total variance, once corrected and rotated the component matrix (Varimax Normalized). The initial self-value for the first factor corresponded to 24.304% of the variance, the second to 22.134% and the third to 21.237% of it. In addition, to verify the degree of adequacy of the questionnaires to the participants, a confirmatory factorial analysis of the main components was conducted to evaluate data's goodness of fit. Adequate values are obtained in the KMO index (Kaiser-Meyer-Olkin), .812, and in the Bartlett sphericity test ($p < .05$). This test presented a Chi-square value of 125.176 and 10 degrees of freedom. The indexes obtained in the covariance matrix presented satisfactory adjustments for the RMSEA index (Root Mean Square Error Approximation) = .069. In this index, values lower than .05 indicate a good fit, and values of up to .08 represent reasonable approximation errors (Herrero, 2010). CFI (Comparative Fit Index) and GFI (Goodness of Fit Index) values of 0.82 and 0.84 respectively were obtained, which indicated a good fit (Hu and Bentler 1999). Therefore, the final three study factors were: (1) Social goals: the creation of personal links and friendship with classmates; (2) Discipline strategies: how to develop students' self-control or self-discipline; and (3) Autonomy support: link what is done in class with sport practice outside school.

Qualitative

Qualitative information was obtained from three discussion groups conducted with the participating students (one from each country). Each group had eight members (four men and four women). The discussion groups were held in each country at the end of each intervention period. Qualitative research do not search for representation and the focus groups were not considered national focus groups. The objective was to explore the thoughts and feelings of this group of prospective PE teachers regarding what was experienced during the TPSR intervention program and its possibilities in their particular educational context. The questions for the focus groups were based on students' achievement of three goals: social skills, discipline strategies and autonomy support. This allowed to maintain a linearity between the two methodological approaches. The questions were open-ended, which helped the future teachers to delve into them. A climate of trust and tranquillity was fostered to seek a personal dialogue based on conversation (Patton 2002). This structure favours a more varied and deeper exchange of ideas (Smith and Osborn 2003). Table 3 presents the six questions used to conduct the discussion groups. Two questions were asked for each of the three factors of the study. The goal was to help participants contribute and deepen into the variables of the study, thus guaranteeing complementarity of the data. The discussion groups were held in a

1 university classroom, they lasted approximately 90 minutes and they were recorded on video
2 for a better data transcription.

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9 ***Data analysis***

10 As introduced earlier, the research methodology was mixed; using both quantitative and
11 qualitative analysis. This complementarity in data treatment allows to obtain a holistic view of
12 the results obtained, as well as greater understanding (Hall and Ryan 2011). The factors of in
13 quantitative analysis and the qualitative variables are the same, which gives a linearity to the
14 mixed research method used. The research question number 1 was answered with the
15 quantitative analysis and the objective number 2 with the qualitative one.

16 17 ***Quantitative***

18 Statistical analysis was conducted with the statistical package SPSS (version 22.0). The
19 Kolmogorov-Smirnov test ($n > 50$) was used to assess data distribution. It was observed that
20 the sample normally distributed ($p = .128$). For this reason, parametric tests were conducted.
21 Finally, a repeated measures Anova was used to assess changes after the intervention
22 program.

23 24 ***Qualitative***

25 The computer program WEFT QDA was used for to help in the analysis. Content analysis and
26 constant comparison were used to assess qualitative data (Libarkin and Kurdziel 2002). From
27 the cross-pattern analysis of texts, the most coinciding extracts were codified (Saldaña 2009).
28 These extracts were grouped into categories and subcategories, related to the three study
29 factors. These categories were the same as the factors extracted from the quantitative analysis
30 (both parts were complementary). The themes that emerged in the first independent analysis
31 were critically examined by all the researchers through reflective dialogue. Reliability was
32 supported through continuous feedback and participatory analysis by all researchers, who
33 reviewed and refined the emerging categories. Therefore, results could be considered reliable,
34 credible and transferable (Lincoln and Guba 1985). The objective was to obtain specific
35 information that would deepen and complement quantitative data, thus providing greater
36 comprehensibility of the results. An open, axial and selective coding was conducted under an
37 interpretive analysis model. In each participating group, the following coding was used:
38 Discussion Group in Spain (GDS), Discussion Group in Chile (GDC), and Discussion Group
39 in Costa Rica (GDCR). These codes were used to identify the text extracts selected in the
40 content analysis. All the information obtained was grouped into the three categories of
41 analysis: social goals, discipline strategies and autonomy support. Within each category there
42 were subtopics related to the experiences and social and curricular influences of PE in each
43 country.

44 45 **Results**

46 ***Quantitative Analysis***

47 ***Inferential analysis: repeated measures Anova for independent groups***

48 In the pretest, significant differences were found in factor 1 “social goals” between Chile and
49 Spain ($p = .024$) and in factor 2 “discipline strategies” between Costa Rica and Spain ($p =$
50 $.018$). Regarding the pre-test, post-test differences, only Spanish students experienced a

1 significant increase in factor 2 “discipline strategies” ($p = .002$). Regarding post-test results,
2 significant differences were found between countries in factor 1 “social goals”: students from
3 Chile had significantly higher values than the Spanish ones ($p = .023$) and in factor 2
4 “discipline strategies”: students from Costa Rica obtained significantly higher values than
5 those from Chile ($p = .038$).

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7 [INSERT TABLE 4 HERE]
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10 11 12 ***Qualitative Analysis***

13 All the information extracted from the discussion groups was grouped into three categories.
14 They are the same as the factors extracted in the quantitative analysis, which guarantees the
15 complementarity of the data and the depth of the study. Through the analysis of crossed
16 patterns, the number of text extracts was calculated for each category. The information is
17 presented according to the categories of analysis, showing in each one data (extracts) related
18 to the three discussion groups (the most significant ones). This reveals the differences existing
19 in each country with respect to each category. The fact of separating the presentation of the
20 quantitative from the qualitative analysis, structures the information according to the two
21 objectives of the study.

22
23 *Social goals* (293 text extracts). Students from Spain acknowledged the value that the TPSR
24 could have in the school to improve students’ social behaviours. They emphasized how
25 important is that the teacher also believes that the social climate is crucial in PE. The
26 following statements show how the curricular role of the subject and the interpretation the
27 teacher makes of it, affect teachers’ responses to the TPSR approach, considering the
28 pedagogical approach, but preserving its motor character:

29
30 *"I liked it [TPSR] a lot, but the first thing that the teacher has to keep in mind is that the*
31 *social climate in the PE class is fundamental". "Sometimes we [teachers] work a lot on*
32 *pedagogy: objectives, evaluation criteria... and many times its [PE] essence is lost".*
33 *"The pedagogical approach is important, but we [teachers] cannot forget that PE is*
34 *motor practice and we [teachers] must work around it" (GDS).*

35
36 Students from Chile were enthusiastic about the TPSR since they did not know a framework
37 to teach respect and listening to others. They acknowledged that PE in Chile does not focus
38 on the implementation of pedagogical models that allow the pursue of social goals:

39
40 *"The key for PE has to start from making students tolerant and respectful and then*
41 *perform sport in optimal environments". "The different contexts in which physical*
42 *activity develops in the country do not intentionally seek an improvement in*
43 *interpersonal relationships". "In Chile, the relational aspect of PE is not known"*
44 *(GDC).*

45
46 Students from Costa Rica highlighted that the TPSR allows students to learn self-regulation
47 and respect for others during the tasks, which is very important, because PE focus on sport
48 performance:

49
50 *"What I liked most about the practice [TPSR] is the responsibility that students must*
51 *have towards their work [...]". "Assessment of others has repercussions, since later it is*

1 possible to transfer what was learned outside the classroom [...] This is very important
2 in our country, since it seems that the only important thing is sports performance"
3 (GDCR).
4

5 *Discipline strategies* (321 text extracts). Spanish prospective teachers highlighted the concept
6 of personal and social responsibility as the two key elements of the TPSR model. They
7 acknowledged the promotion of students' commitment and effort as key elements in their
8 professional training:
9

10 *"We have seen contents and pedagogies in college, but what this [TPSR] gives me most*
11 *is the possibility to control the classroom helping students respect the rules". "This*
12 *model [TPSR] shows students that they have to accept responsibilities [...] which is very*
13 *important in pour training". . "I see every year that boys do not take responsibility and*
14 *perform the activities without respecting others. The gratification is greater when they*
15 *have done this". "In fact, we [teachers] have seen how the most responsible students in*
16 *class are those who maintain discipline during the tasks [...]. This idea is clearly*
17 *reflected in the current Education Law, which emphasizes effort and commitment as*
18 *fundamental in schools"* (GDS).
19

20 Chilean students emphasized that although discipline is interesting and necessary, it is
21 important to combine it with students' freedom and creativity. This is connected to the
22 modifications that the curriculum has suffered in recent years towards sports performance:
23

24 *"In Chile we are suffering a very strong and anti-pedagogical movement to change PE*
25 *towards instruction and training [...]. You [teacher] have to be very careful and give*
26 *students freedom". "From Nursery school, current curriculum focuses on preventing*
27 *sedentary behaviours and promoting sport practice above all, which harms open*
28 *pedagogies"* (GDC).
29

30 However, the future teachers from Costa Rica considered that maintaining discipline in PE is
31 key if they want to give curricular rigor to PE:
32

33 *"It is impossible to achieve learning through PE if there is no discipline [...]. This*
34 *model [TPSR] has levels, something that allows a step by step improvement ". "Working*
35 *on discipline does not mean that you [teacher] can't be pedagogical too". "In our*
36 *country, it is observed that the children who perform more physical activity outside the*
37 *PE class are those who have more discipline in class". "Only individuals who show*
38 *discipline and commitment practice sport". "We need our students to do sport in and*
39 *oput of the school, and PE plays a key role"* (GDCR).
40

41 *Autonomy support* (303 text extracts). Spanish students indicated that the TPSR model's
42 levels can generate autonomy and decision making skills. They also highlighted that the
43 model can be used in all kinds of contents:
44

45 *"The most important thing is that we [teachers] work on things in class to have a*
46 *positive impact on the students [...]. This is the only way if we [teachers] want them*
47 *[students] to do sport outside the PE class". "It is important to work on autonomy, but*
48 *also giving them resources and alternatives for practice [...] It is important to create*
49 *motivating contexts for physical activity both inside and outside the school". "Initiatives*

1 *such as the day of PE on the street helps generate students' autonomy". "The model*
2 *and its levels can help teachers work on students' autonomy with any content" (GDS).*

3
4 The future Chilean teachers emphasized that PE teachers should not only focus on sports,
5 since interpersonal skills can help students' develop their autonomy towards sport practice:

6
7 *"In PE, we [teachers] can work on different areas of the individual [...].Work with*
8 *different pedagogical models is great, because the more strategies you [teacher] know,*
9 *the more you can do in class ". "In PE, students have the opportunity to be in touch*
10 *with each other through motor tasks, understanding and valuing each other... and this*
11 *should be the focus to impact society". "It is not only important to teach sports in class,*
12 *but also social skills". "This type of work [TPSR] in PE is fundamental for our students*
13 *to be more empathetic and better citizens in the Chilean society" (GDC).*

14
15 Finally, the Costa Rican participants considered that it is possible to acquire autonomy
16 towards sport practice through the TPSR, since it is a guided model (it has levels):

17
18 *"Since the model includes tasks at different levels, the teacher can easily control at what*
19 *level each student is working [...]" "If the student is aware of his/her own progress,*
20 *there is more chance that he/she will develop autonomy towards sports practice in*
21 *his/her free time". (GDCR).*

22 23 **Discussion**

24 The objectives of the study were two: (1) to compare the impact of TPSR on social goals,
25 discipline strategies and autonomy support of future PE teachers from Spain, Chile and Costa
26 Rica; and (2) to assess participants' perceptions of their country's social, cultural and curricular
27 aspects that may influence TPSR implementation. Quantitative results showed that after the
28 intervention program the mean values of the three factors of the study increased, although
29 only significantly in discipline strategies in the future Spanish teachers. In the post-test,
30 Chilean students achieved significantly higher values than Spaniards in social goals, and those
31 from Costa Rica significantly higher than Chileans in discipline strategies. Qualitative results
32 showed that the prospective PE teachers from the three countries held different views on the
33 three factors assessed, and they were based on socio-cultural considerations of the subject
34 (PE), their academic training and their professional identity as teachers on each country.

35 Regarding discipline strategies, the significant increase that the Spanish teachers experienced
36 after the intervention program showed the consistency of the TPSR model to show future
37 teachers strategies to develop discipline in their classes through responsibility. This asset of
38 the model has been directly linked to the students' intrinsic motivation and the class climate
39 (Baena-Extremera et al. 2015). Previous studies have shown how important is for Spanish PE
40 teachers to maintain discipline in their classes (Martínez-Galindo et al. 2009), being
41 classroom task climates the best predictor of discipline (Moreno et al. 2009). Moreover, the
42 use of pedagogical models has been linked with greater student responsibility in assessment
43 and co-assessment procedures (Hortigüela, Pérez-Pueyo and Fernández-Río 2017). In certain
44 contexts, PE is exclusively linked to play or physical activity practice, which considerably
45 limits the subject's potential (Dyson 2014). Quantitative results maintain a linearity with
46 participants' answers in the qualitative part of the study, since they emphasized classroom
47 control and students' discipline as the elements that most worry them in their professional
48 future. This seems to be normal in ITT. Novice PE teachers look for the "safety" that students
49 in silence, listening and paying attention to their instructions gives them. However, the
50 country that obtained the highest scores in the discipline factor was Costa Rica. If the results

1 in the pre-test already showed significant differences with respect to Spain, in the post-test
2 they were obtained with respect to Chilean students too. The reasons for these differences can
3 be observed in the qualitative data. Although for Chilean students discipline is necessary, they
4 argued that this should not override students' freedom and creativity, while Costa Ricans
5 associated discipline with the curriculum rigor that a discredited subject (like PE) must
6 achieve. There seems to be a different perception regarding discipline's concept and
7 implementation in PE. Jung and Choi (2016) indicated that it should be balanced with
8 students' freedom, because if the classroom is not structured around minimum performance
9 commitments, it is not feasible to generate positive learning climates. This must be clearly
10 differentiated from the traditional approach to PE, that has been so negative for its conception
11 as a discipline (Colquitt et al. 2017). Each group of ITT students explained that in their
12 country expectations about discipline were different. Spanish students emphasized its
13 importance in class, but involving the students in the teaching-learning process. In Chile,
14 discipline is based on inquiry and creativity (Pill and SueSee 2017). Finally, PE in Costa Rica
15 is focused on authority and respect to the teacher, and excessively oriented to sports
16 performance. The Chilean participants manifested that they are immersed in an anti-
17 pedagogical and instrumentalized movement in PE, while the Costa Ricans believed that
18 without discipline, no social advances can be obtained. These results indicated that ITT
19 candidates brought their particular cultural background to the TSPR training. This is
20 important to consider when trying to transfer pedagogical models from one country to
21 another. ITT instructors should be aware of the social and cultural background of the novice
22 teachers to promote a proper fit between the pedagogical model's basic principles and the
23 country's contextual trends. There is a long way from theory to practice which needs to be
24 addressed.

25 Regarding social goals and autonomy support, there were increases after the intervention, but
26 they were not statistically significant. These results show a clear tendency of change that,
27 probably, the short duration of the intervention program (10 sessions) did not show. Pre-
28 service teachers struggle to get away from traditional approaches and embrace new
29 pedagogical models such as TPSR (McCaughtry et al. 2004). They need to be involved in
30 continued professional development to integrate new approaches and be ready for a true
31 pedagogical change (Sinelnikov 2009). It certainly takes time to provoke an instructional
32 shift, but the results from the present study indicated that a positive trend was achieved in
33 these pre-service teachers. Chilean students obtained significantly higher values than Spanish
34 students both before and after the intervention. This reflects the greater importance that from
35 the beginning this group of future Chilean PE teachers gave to social links and autonomy
36 support. In this country, PE focuses on freedom of movement, interdisciplinarity and critical
37 thinking (Landi, Fitzpatrick and McGlashan 2016) which promotes autonomy. This difference
38 highlights the contrast between the two traditional existing approaches in PE worldwide: a)
39 motor and sports performance; and b) learning and participation (Backman and Larsson
40 2016). Batia (2013) indicated that the more teachers work on the class climate (social links)
41 using appropriate pedagogical approaches, the more students' in-class autonomous motivation
42 and levels of physical activity practice will increase. Spanish participants highly valued the
43 TPSR level structure, because it can generate autonomy and decision making skills. Chilean
44 students highlighted the importance of cooperation and sociability in PE, and found that the
45 TPSR model can help promote both. They emphasized respect and tolerance towards others as
46 fundamental premises to develop appropriate class climate, and both are included in the TPSR
47 model.

48 To our knowledge, only Lee and Choi (2015) conducted a study on the TPSR model and
49 teacher candidates in Korea, and they found that it was necessary to adapt it developing
50 cultural differentiation strategies. This is in line with our findings, which showed that there

1 exist cultural differences among countries, and teachers need to modify the model to
2 implement it correctly. Similar studies conducted in experienced teachers in Spain (Pascual et
3 al. 2011) indicated that fidelity of implementation is the key for success, and sometimes it is
4 not easy due to cultural differences among countries. Systematic reviews have produced
5 contradictory results: Pozo, Grao-Cruces and Pérez-Ordás (2018, 17) revealed that “cultural
6 differences between participants.... may be barriers to developing the TPSR model-based
7 programme”, while Caballero, Delgado-Noguera and Escartí (2013), comparing the studies
8 that have implemented the TPSR model in the United States and Spain, obtained similar
9 results despite the cultural differences between both countries.

10 11 **Conclusions**

12 The prospective PE teachers from the three countries held different views of the effects of the
13 TPSR program on social goals, discipline strategies and autonomy support, and they were
14 based on socio-cultural considerations of the subject (PE), the teachers’ academic training and
15 their professional identity as teachers on each country. The TPSR program had a significant
16 positive effect in the future PE Spanish and Costa Rican teachers’ discipline strategies, and
17 Chilean social goals. Results represent a significant contribution to the existing literature on
18 TPSR and PE since it was observed: a) a positive perception of the model for future PE
19 teachers and b) slightly different perceptions in countries of different continents. It seems of
20 special relevance that ITT programs should try to promote methodological resources for
21 future PE teachers, fostering a reflection on the subjects’ role in the educational system to
22 improve it. Future research should implement longer intervention programs. This research can
23 be of interest for those working in ITT programs, as well as for PE teachers interested in
24 improving their students’ personal and social responsibility.

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