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**Original Article**

# Differences between sport education and traditional teaching in developing students' engagement and responsibility

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**Abstract**
Physical education not only provides conditions for the development of motor skill competence and the adoption of healthy lifestyles, but it is also valued for its influence on students' personal and social development. In particular, the ability to develop personal and social responsibility and engagement fostered in physical education provides skills that can contribute to a student's inclusion in society and a successful transition to adulthood. Nevertheless, different teaching approaches adopted by teachers may lead to different outcomes. The purpose of this study was to verify and compare the effects of two different teaching approaches, Traditional Teaching and the Sport Education model, on students' responsibility and engagement in high school Physical Education classes. A quasi-experimental pretest-posttest design was used across eighteen classes from eight different schools in northern Portugal. The participants were 430 high-school students (66.7% male), aged between 14 and 21 years (M =16.22, SD =1.03) enrolled in 10th, 11th and 12th grades.All classes met twice a week across 8 weeks, for a total of twenty-four 45-min lessons. Two hundred and twenty-six students participated in a 24 lesson unit following the Traditional Teaching, while 204 students were taught using the Sport Education model. Students' personal and social responsibility was assessed with the Personal-social Responsibility Questionnaire, and the Athlete Engagement Questionnaire was administered to assess students' engagement. Results showed that participation in the SE season significantly improved the students' levels of personal and social responsibility. In contrast, the perceptions of personal responsibility of students in the Traditional Teaching unit decreased. No significant difference was found in student engagement when the two teaching approaches were compared. These results suggest the suitability of the Sport Education in physical education classes, and particularly on its positive impact on students' personal and social responsibility and engagement.
**Keywords:** Teaching models, skills development, personal and social skills, physical education, preservice teachers.

## Introduction

Students who develop personal and social skills during their formal education are more likely to be successful learners(Capel, Breckon, & O'Neill, 2013; Priestley & Biesta, 2013), to be included in society, and to transition successfully to adulthood(Taggart, 1988; Wright & Craig, 2011). While the goal of Physical Education (PE),that distinguishes it from other subjects in schools, is the development of motor skill competence, across many countries there is considerable attention placed on the acquisition of attitudes and values that lead to personal and social development (Coulter, McGrane, & Woods, 2020). That being said, evidence suggests that participation in PE may or may notpositively influence the development of young peoples' personal and social skills (Beni, Fletcher, & Ní Chróinín, 2017; Opstoel et al., 2019). However, simply participating in PE may not be sufficientfor achieving positive outcomes (Cryan & Martinek, 2017; Fraser-Thomas & Côté, 2009). Rather, it is necessary to create deliberate pedagogical environments and circumstances that promote active and engaged participation under which positive outcomes can be stimulated and obtained (Bailey et al., 2009). Those pedagogies include cooperative learning(Dyson, Griffin, & Hastie, 2004), experiential learning(Tapps, Passmore, Lindenmeier, & Kensinger, 2014), problem-based learning(Jones & Turner, 2006), and other pedagogical methods.

It can be seen that the pedagogies valued in the development ofstudents' personal and social skills, such as engagement and responsibility, run counter tothe most predominant form of instruction in PE,an approachwhich involves a teaching style where decisions concerning planning, instruction, and assessment are made by teachers with little or no student input(Mosston & Ashworth, 2008). For the purposes of this paper, that


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approach has been given the label of Traditional Teaching (TT), largely because it has been the predominant form of instruction across the past 50 years (Moy, Renshaw, & Davids, 2016).

InTT,classes involve reproductive (rather than discovery) pedagogies that are based on efficient knowledge transfer and focus on teaching elementary skills and techniques within a highly structured lesson (Rink, 1993). By consequence, students are required to be attentive, well-behaved and disciplined, while directing their attention to predominantly motor-oriented than cognitive-oriented tasks (Rosado & Mesquita, 2009; Rosenshine, 1979).

The early research on the impact of TT suggests it is effective in improving students' skill performance (mostly in less complex skills and in early ages)(Brady, 1998; Rink, 1993),through high rates of positive and corrective feedback(Metzler, 2017).In contrast, the weakness frequently attributed to such controlling teaching style is that students' ability to build their own learning is compromised, decreasing their autonomy, decision-making, and cognitive and social processes (Ennis, 2014; Metzler, 2017; Siedentop, Hastie, & van der Mars, 2020).Consequently, during the 1990s, a number of prominent scholars in PEpresented alternatives to the TT approach by introducing what Ennis (2014, p. 63)referred to as a second generation of models. These includedSport Education (SE) (Siedentop et al., 2020), Teaching Games for Understanding(Bunker & Thorpe, 1982) or Teaching Personal and Social Responsibility (Hellison, 2011). A commonality across these models is that students must be capable of acting autonomously, responsibly and competently with the challenges, risks and opportunities they face. These models follow a "Student-CenteredApproach" (SCA),which based on constructivist and social learning theories (Chandler & Mitchell, 1991),and designed to promoteproblem solving and decision making.Therefore, the student occupies a central place inthelearning process, playing an active role in building his/her knowledge and developingautonomy and responsibility skills(Lynch, 2019).

In PE, one amongst the foremost wide applied and researched model is Sport Education(Siedentop et al., 2020).The structure and pedagogies of SE shift the focus from content to transferable skills, knowledge, and behaviorsand values, providing experiences that are deeper and more complete than typical PE approaches (Siedentop, 1998). All students are offered the opportunity to work in small groups, where peer teaching is promoted, as well as the possibility of performing different roles beyond simply that of player. These roles can include, among others, referee, coach, statistician, scorekeeper or sports director.Within suchroles, opportunities are created for students to make decisionsand solve problems, seeking to promote their autonomy, responsibilityand commitment (Mesquita, Farias, & Hastie, 2012). With the aim to develop students as competent, literate, and enthusiastic sportspersons, Siedentop (1998) supported SE with six distinctive features (affiliation, formal competition, record keeping, seasons, culminating events, and festivity).

Research on SE has demonstrated positive and significant outcomes of participants' game performance and tactical-technical knowledge (Araújo, Mesquita, & Hastie, 2014) their personal and social skills such as engagement, motivation, responsibility, or fair play (Bessa, Hastie, Araújo, & Mesquita, 2019; Chu & Zhang, 2018).However, with respect to students' personal and social development, there is still a need for further empirical evidence comparing and showing the impact of different teaching models. Although responsibility and engagement are two of the foremost studied personal and social variables of SE learning outcomes(Bessa et al., 2019), research comparing SE and TT has focused more on autonomy(e.g. Perlman, 2010), motivation (e.g. Spittle & Byrne, 2009), and enjoyment (e.g. Browne, Carlson, & Hastie, 2004).

In the school context, the importance of the students' engagement is recognized , as it reflects, through the student's behavior, confidence, dedication, and enthusiasm for learning and development(Reeve, Jang, Carrell, Jeon, & Barch, 2004). Indeed, the engagement of studentshelps to predict theirachievements and allows teachers to use it as an observable indicator of students' motivation.In turn, there is a general consensus on the importance of students assuming greater responsibility for their learning, in order to achieve a deep understanding and transferable skills that benefit them throughout their lives(Hellison, 2011).

To our knowledge, no study has assessed the perception of students' engagement comparinga SE season and a more traditional unit in PE classes, and only two studies(Browne et al., 2004; Pan, Huang, Lee, & Hsu, 2019) compared students' responsibility across different teaching models. In the study of Browne et al. (2004), interview data supported that students identified greater responsibility in SE than in TT. In turn, Pan et al. (2019)mergedunits of TT and SE with Teaching Personal Social Responsibility Model (TPSR-SE and TPSR-TT) and results showed thatTPSR-SE had superior outcomes in three dimensions (effort, self-direction, and cooperation) of the responsibility scale.

For specific learning outcomes, optimal learning environments need to be designed(Metzler, 2017). There is still a lack of controlled comparisons between TTand SE in promoting engagement and responsibility as personal and core learning outcomes, and still more involving Pre-Service Teachers (PSTs).It is an opportunity to challenge PSTs and to inform the PETE programs, seeking to optimize the process of learning to teach PE (Curtner-Smith, 2012; O'Sullivan, 2003), considering the requirements currently demanded by society for students' personal and social development. The use of classes taught by PSTs allows knowing if their students perceive any differences between teaching approaches and, consequently, understand whether PSTs are using each teaching approach effectively. Furthermore, it allows the dissemination of relevant data that shows the strengths of different approachesto the development of students' engagement and responsibility. It is also an opportunity to overcome potential barriers to the implementation of different PE teaching approaches, such as

resistance within some PE departments or in-service teachers' own beliefs and habits (Penney, Clarke, Quill, & Kinchin, 2005).

The purpose of this study was to compare the effects of the two differentteachingapproaches (TT or SE)on students' responsibility and engagement in high school PE classes.

**Material and Methods**

*Participants and setting*

The participants in this study were 430 high-school students (66.7% male) in eight different schools located in northern Portugal.These students were in grades 10 ($n$= 199; 8 classes), 11 ($n$= 181; 8 classes) and 12 ($n$ = 50; 2 classes) and ranged in age from 14 to 21 years ($M$ =16.22, $SD$ =1.03).

The 18 PSTs (12 male and six female) involved in this study were in the finalyear of their master's degree program in*Teaching of Physical Education in Primary and Secondary Education*at a large public university in northern Portugal.AllPSTshad completed practical experiences as learners across a number of PEcontent areas, and had experience with both teacher and student-centered approaches. The PSTsalso had experience in teaching TT and SE lessons during the previous year of their coursework. In addition, during their student teaching, the PSTs taught complete versions of the models under the supervision of experienced teachers who were familiar with each approach and model. As this studywas conductedduring the third term of the school year, all PSTs hadpreviously taught units of each model with the same classes from which the data were collected. For this study, the PSTs only taught one of the two conditions (TT or SE) to their class.

The ethics committee of the first author's university approved the protocol of the study, and all institutions and participants provided assent following parental informed consent.

*Method*

A quasi-experimental pretest-posttest design was used across eighteen classes from eightdifferent schools. Pretests and posttests took place at the first and last lesson of the unit, respectively.

Two hundred and forty lessons across ten different classes at six schools were taught using the TT approach, while192lessons across eight different classes were taught at six schools following the key principles of SE. All classes were co-educational and met two times a week (one lesson was scheduled for 45 minutes and the other for 90 minutes), during a period of eight weeks.

*Description of the units*

Table I shows the list of schools, model, seasons/units, grade,and participants.

*Traditional Teaching*

The TT units had the PST as instructional leader. He/Shewas responsible fordefining the learning content and presenting students with a technique model of movement, forimplementing the class warm-ups, controlling the place of the tasksand monitoring the practice. The PST generally used whole-class instruction. Lessons began with basic skill drills to game play, with practice organized in blocks of students providing high rates of practice and repetition. In the final part of each lesson, students chose teams to compete against each other (students had different teammates each lesson). The last three lessons were solely dedicated to competition between teams, organized by the PST. All record keeping was conducted by the teacher. No formal statistics were kept. Students were not responsible for other roles such as refereeing or scorekeeping.

*Sport Education*

The SE seasons followed the key principles suggested by Siedentop et al. (2020) to ensure the most authentic experience. These are affiliation, formal competition, festivity, seasons,record keepingand the inclusion of a culminating event. All classes met the equivalent of a SE season of twenty-four 45-min lessons.

In the initial lessons (1-2), the PST presented the model, described the roles and explained the competition format. Equally skilled teams were created by the PST, following the criterion of homogeneity in gender and level of motor ability. These teams were maintained throughout the season. After being placed on teams, the students assigned roles, designed colored shirts, and determined their team name. All students practiced different roles (at some point of the season) such as coaching the team, refereeing games, scorekeeping and keeping team, and individual statistics; however, no formal statistics were posted.

The following four lessons (3-6) were led by the PST for basic skills introduction. In the student-led phase, the lessons began with a warm-up (led by students), then the first half was dedicated to the practice and the second to formal competition. Lessons 7 through 15 involved teams practice and competition against each other while learning roles such as referee, scorekeeper and statistician.Lessons 16 through 23 were dedicated to a tournament. In these lessons (16-23), scores related to fair-play were attributed, which were counted towards the final score of each team. The last lesson consisted of a final competition and awards ceremony.

Table I. List of schools, model, seasons/units, grade and participants.

| School | PST | Model | Grade | Students | Sport played |
|---|---|---|---|---|---|
| A | 1 female | SE | 10 | 10 Boys 16 Girls | Track and field |
| | 1 female | TT | 10 | 15 Boys 10 Girls | Track and field |
| | 1 male | TT | 10 | 21 Boys 2 Girls | Track and field |
| | 1 male | SE | 10 | 10 Boys 19 Girls | Volleyball |
| B | 1 male | TT | 11 | 19 Boys 5 Girls | Volleyball |
| | 1 male | TT | 11 | 19 Boys 5 Girls | Football |
| C | 1 female | TT | 11 | 7 Boys 13 Girls | Basketball |
| | 1 female | TT | 11 | 11 Boys 11 Girls | Basketball |
| D | 1 male | TT | 10 | 5 Boys 14 Girls | Volleyball |
| | 1 male | SE | 10 | 12 Boys 14 Girls | Volleyball |
| E | 1 male | TT | 12 | 3 Boys 19 Girls | Basketball |
| | 1 male | SE | 11 | 10 Boys 15 Girls | Gymnastics |
| | 1 male | TT | 12 | 16 Boys 12 Girls | Basketball |
| F | 1 male | SE | 10 | 16 Boys 9 Girls | Rugby |
| | 1 female | SE | 10 | 12 Boys 14 Girls | Rugby |
| G | 1 male | TT | 11 | 11 Boys 7 Girls | Gymnastics |
| H | 1 female | SE | 11 | 10 Boys 14 Girls | Gymnastics |
| | 1 male | SE | 11 | 5 Boys 18 Girls | Gymnastics |

*Validity of instruction*

A 10-item checklist (Table II) from Hastie, Calderón, Rolim, and Guarino (2013) was used to determine the behavioral fidelity of the PST's instruction according to SE or TT. The checklist asks a trained observer to make decisions about whether an item is representative of the lesson.

In this case, videotapes of four randomly selected lessons of each class were examined by two experts with extensive research in instructional models. Analysis across the two experts revealed a 100% agreement, confirming the instructional model used in the lessons. To be effective, an instructional model needs to consider the contextual conditions such as teacher proficiency and student willingness for the model(Metzler, 2017). All PST's were familiar with both models, havingexperienced SE and TT as participants during their on-campus coursework, and having taught units/seasons of TT and SE. The SE PSTs also attended a three-hour SE workshop led by an investigator who was familiar with the SE curriculum and the challenges implementing this model in schools. All schools provided the space and material need(e.g. balls, cones, scorers, whistles, etc.) to create the required conditions for suitably implemented both models.

Table II. Instructional Checklist (Hastie et al. 2013).

| |
|---|
| 1. Groups of students go to a designated home area and begin warming up with that group. |
| 2. Students warm-up as a whole class under the direction of the teacher. |
| 3. Students practice together with their group/team under the direction of a peer leader. |
| 4. Students practice individually or in small groups under the direction of the teacher. |
| 5. Students remain a part of easily identifiable groups throughout the lesson and throughout different tasks. |
| 6. Student grouping throughout the lesson is variable across tasks. |
| 7. Performance records are kept by students. |
| 8. Students perform specialized tasks within their group/team. |
| 9. Student performance scores count toward a formal and public scoring system. |
| 10. Student performance scores are not recorded or are recorded in private. |

Note. Items 1, 3, 5, 7 and 8 suggest a SE season, whilst items 2, 4, 6, and 10 are features of the TT.

*Instruments*

*Personal-social responsibility***.** Personal-social responsibility was measured by the *Personal-social Responsibility Questionnaire* (Li, Wright, Rukavina, & Pickering, 2008), translated and adapted for Portuguese

populations by Martins, Rosado, Ferreira and Biscaia(2015). The questionnaire consists of two factors with each one containing seven items. The first factor (personal responsibility) reflects an individual's effort and self-direction.Sample items include "I try hard" and "I set goals for myself". The second factor (social responsibility) reflects respect and caring for others. Sample items include "I respect my class mates" and "I am helpful to my class mates".A 5-point Likert-type scale, extending from 1 (never) to 5 (always), was used to measure all items.

*Engagement***.** Engagement was measured using the *Athlete Engagement Questionnaire*(Lonsdale, Hodge, & Jackson, 2007), translated and adapted for Portuguese populations by Martins, Rosado, Ferreira and Biscaia(2015). The 16-item questionnaire has four factors: confidence, dedication, vigor, and enthusiasm. Confidence reflectsa belief in one's ability to attain a high level of performance and achieve desired goals. Dedication reflects the desire to invest effort and time towards achieving goals seen as important. Vigor refers to thephysical, mental, and emotional energy or liveliness. Enthusiasm is characterized by feelings of excitement and high levels of enjoyment. Sample items include: "I feel capable of success in PE class" (confidence), "I am dedicated to achieving my goals in PE class" (dedication), "I feel really alive when I participate in PE class" (vigor), and "I feel excited about PE class" (enthusiasm). A 5-point Likert-type scale, extending from 1 (never) to 5 (always), was used to measure all items. Both questionnaires were completed in a classroom setting during school time in the presence of the first author. Average completion time was 10 minutes. Pre-test and post-test data were collected in the first and last lesson of the unit/season, respectively.

*Data analysis*

All data were analyzed using SPSS 26.0 (IBM, Chicago, IL). Descriptive analyses were performed to characterizethe samples and establish whether data met parametric assumptions. Given that dependent variables were not normally distributed, and considering the ordinal scale of items, non-parametric tests were used to analyze gathered data. Ordinal alpha (Zumbo, 2007) for Likert data as a measure of the reliability of the scales were calculated. Ordinal alpha is conceptually equivalent to Cronbach's alpha and it performs better for ordinal data. To test differences between groups in the two assessment moments (PreT andPosT), the Mann-Whitney test for two independent samples (responsibility and engagement) was used. The Wilcoxon test was used to test intra-group differences from the PreT to the PosT. When the Wilcoxon's yielded a significant difference, subsequent analyses were performed at the subscale level to provide insight into the precise location of differences The *r* statistic for non-parametric tests (Field, 2013) was used to estimate the effect size using the formula: $r = Z / \sqrt{N}$ where *Z* represents the absolute Z-value resulting from the non-parametric test; and *N* to the total number of subjects. According to Cohen (1988), a small effect size with $r<.30$, a moderate effect size with *r* between .31 and .50, and a large effect size with $r> .50$ were considered. While a statistical level of .05 was used to determine significance, the exact *p* scores are presented in the results.

**Results**

Ordinal alpha coefficients and descriptive statistics for both conditions and all measures at pre- and post-test are displayed in Table III and IV. According to Nunnally's (1994) cut-off criterion of .70 for the psychological domain, all subscales were considered acceptable. The analysis of descriptive statistics allows identifying changes between the pre- and the post-test in both groups. In the PreT, no significant differences were found between the TT and the SE group, confirming the homogeneity among groups in both dependent variables, personal and social responsibility and engagement (Table V). In the PosT, significant changes were found on personal and social responsibility ($p< .001$), with a small effect size ($r = .28$), revealing that the SE context promoted improvements in this variable. In contrast, no significant differenceswere found between groups (TT and SE) on students' perceptions of engagement.

Table III.Descriptive statistics and internal consistency of subscales for TT ($n = 226$).

| | | PRE-TEST | | | | POST-TEST | | | |
|---|---|---|---|---|---|---|---|---|---|
| Measure | Subscale | Ordinal α | *M* (SD) | $M_e$ | SkeKur | Ordinal α | *M* (SD) | $M_e$ | Ske Kur |
| TPSR | | .89 | 4.09 (.03) | 4.14 | - .45 - .20 | .94 | 3.92 (.04) | 4.00 | -.94 .83 |
| | Social responsibility | .74 | 4.12 (.03) | 4.14 | - .27 - .15 | .88 | 3.98 (.04) | 4.00 | - .99 1.01 |
| | Personal responsibility | .86 | 4.07 (.04) | 4.14 | - .59 - .26 | .90 | 3.87 (.05) | 4.00 | - .72 .23 |
| AEQ | | .97 | 3.81 (.05) | 3.81 | - .58 .65 | .98 | 3.78 (.05) | 3.90 | - .49 - .35 |
| | Confidence | .88 | 3.92 (.05) | 4.00 | - .39 -. 19 | .94 | 3.89 (.06) | 4.00 | - .56 - .36 |
| | Dedication | .89 | 3.75 (.05) | 3.75 | - .51 .17 | .93 | 3.71 (.06) | 4.00 | - .49 - .33 |
| | Vigor | .88 | 3.65 (.05) | 3.75 | - .52 .65 | .94 | 3.68 (.06) | 3.75 | - .52 - .06 |
| | Enthusiasm | .86 | 3.93 (.06) | 4.00 | - .77 .49 | .89 | 3.86 (.06) | 4.00 | - .54 - .32 |

TPSR - Teaching personal-social responsibility; AEQ - Athlete Engagement Questionnaire.

Table IV. Descriptive statistics and internal consistency of subscales for SE ($n$ = 204).

| | | PRE-TEST | | | | POST-TEST | | | |
|---|---|---|---|---|---|---|---|---|---|
| Measure | Subscale | Ordinal α | *M* (SD) | $M_e$ | Ske Kur | Ordinal α | *M* (SD) | $M_e$ | Ske Kur |
| TPSR | | .90 | 4.07 (.04) | 4.21 | - .73 - .27 | .89 | 4.28 (.03) | 4.29 | - .70 .49 |
| | Social responsibility | .73 | 4.10 (.03) | 4.14 | - .60 .63 | .73 | 4.33 (.03) | 4.43 | - .56 .14 |
| | Personal responsibility | .89 | 4.04 (.05) | 4.14 | - .82 .31 | .88 | 4.22 (.04) | 4.28 | - .99 1.13 |
| AEQ | | .97 | 3.66 (.05) | 3.75 | - .57 - .07 | .98 | 3.86 (.05) | 4.00 | - .45 - .57 |
| | Confidence | .90 | 3.94 (.06) | 4.00 | - .88 .17 | .89 | 4.04 (.05) | 4.00 | - .35 - .34 |
| | Dedication | .91 | 3.62 (.06) | 3.75 | - .45 - .03 | .93 | 3.79 (.06) | 4.00 | - .55 - .19 |
| | Vigor | .93 | 3.41 (.07) | 3.50 | - .46 - .45 | .94 | 3.73 (.07) | 4.00 | - .66 .03 |
| | Enthusiasm | .88 | 3.69 (.07) | 3.75 | - .67 - .13 | .87 | 3.92 (.06) | 4.00 | - .81 .13 |

Table VI presents the results of the Wilcoxon Rank test used to analyze the differences obtained within groups. Significant pre-post intervention differences were found among the study groups on the examined dependent variables. The TT group only showed significant differences inpersonal and social responsibility ($p$ = .017). These students' perceptions of responsibility decreased significantly from PreT to PosT, with a small effect size ($r$ = .16). Regarding the SE group, there were significant improvements in student's perceptions in both variables, personal and social responsibility ($p$< .001) and engagement ($p$< .001), from pre to post-test, with a moderate ($r$ = .35)and small($r$ = .25) effect size, respectively.

Table V. Results of the between-groups analysis using the Mann-Whitney U test for personal and social responsibility and engagement.

| | | PRE-TEST | | | POST-TEST | | | |
|---|---|---|---|---|---|---|---|---|
| Measure | Group | Sum of Ranks | Z scores | *p* | Sum of Ranks | Z scores | *p* | *r* |
| TPSR | TT | 48930.50 | - .18 | .860 | 41302.50 | - 5.76 | < .001 | .28 |
| | SE | 43734.50 | | | 51362.50 | | | |
| AEQ | TT | 50903.50 | - 1.71 | .087 | 47478.00 | - .95 | .341 | .05 |
| | SE | 41761.50 | | | 45187.00 | | | |

Table VI**.** Results of the within analysis using the Wilcoxon test for personal and social responsibility and engagement across time (Pre and Post-Test results).

| Measure | Group | Z scores | *p* | *r* |
|---|---|---|---|---|
| TPSR | TT | - 2.38 | .017 | .16 |
| | SE | - 4.95 | < .001 | .35 |
| AEQ | TT | - .04 | .965 | .03 |
| | SE | -3.51 | < .001 | .25 |

Table VII shows subsequent analyses performed at the subscale level to provide insights into the precise location of differences. From the PreT to the PosT students who participated in a TT unit perceived slight decreases on personal responsibility ($p$< .001, $r$ = .22). Considering the SE students' perceptions, it is worth highlighting the improvements on social responsibility ($p$< .001, $r$ = .40). Although differenceswere not found to be significant for the confidence, slight improvements on personal responsibility ($p$< .001, $r$ = .23), dedication ($p$ = .021, $r$ = .18), vigor ($p$< .001, $r$ = .26), and enthusiasm (p = .002, $r$ = .22) were noteworthy in the SE context.

Table VII.Results of the within analysis using the Wilcoxon test for personal and social responsibility and engagement subscales (Pre and Post-Test results).

| Measure | Subscale | Group | Z scores | *p* | *r* |
|---|---|---|---|---|---|
| TPSR | Personal Responsibility | TT | - 3.32 | <.001 | .22 |
| | | SE | - 3.33 | <.001 | .23 |
| | Social Responsibility | TT | - 1.82 | .068 | .12 |
| | | SE | - 5.70 | < .001 | .40 |
| AEQ | Confidence | TT | - .06 | .952 | .003 |
| | | SE | - 1.53 | .129 | .07 |
| | Dedication | TT | - .37 | .712 | .02 |
| | | SE | - 2.32 | .021 | .16 |
| | Vigor | TT | - .67 | .503 | .04 |
| | | SE | - 3.69 | < .001 | .26 |
| | Enthusiasm | TT | - .90 | .368 | .06 |
| | | SE | - 3.17 | .002 | .22 |

**Discussion**

The present study compared the effects ofimplementating,by PSTs, twodifferent teaching approaches on students' personal and social responsibility and engagement in high school PE classes. Overall, our findings endorsed the notion that participation in the SE season had a positive influence on the students' perceptions of personal and social responsibility. Specifically, the results suggested that while a SE season provides significant enhancements instudents' personal and social responsibility,the participation in aTTunit decreased the students' personal responsibility. In the SE season, the placement of students into persisting small-group activities and competition, theopportunities to lead their own learning process, the opportunity to work as a team and with fair-playmight have promoted their social responsibility development.In addition, in the SE season, personal responsibility was fostered bythe autonomygiven to students (such as refereeing games, scorekeeping or keeping individual statistics),in addition to the opportunity to design and implement team warm-ups and solve problems.These outcomes corroborates the findings of Browne et al. (2004)who examined the impact of SE and TT on students' learning, enjoyment and affect, identifying higher levels of students' responsibility in the SE experience. Furthermore, these results are in line with prior research on SE contexts that recognizes its value on promoting all students' participation, capacity to assumedifferent roles (e.g.,coach, referee and statistician), and opportunities to be autonomous, solve problems and make decisions(Romar, Sarén, & Hastie, 2016). In fact, as claimed by Romar and collegues(2016), as well by Hastie and Buchanan (2000), the students' personal and social responsibility are strongly supported by the mentioned SE features.

In our study, no significant differences were found in terms ofstudents' engagement between the two teaching conditions. Nevertheless, it is relevant to note that in the TT condition the students' perception of engagement decreased from pre- to post-test, and increased for the SE condition. On the one hand, in the TTunit, high levels of student engagementmay have been achieved due to teacher-controlled decisions and teacher-directed engagement patterns for students(Bertills, Granlund, & Augustine, 2019). Furthermore, in the TTunit, the managerial and organizational requisites placed upon the students were minimal (students just needed to follow the teacher commands and repeat the tasks). On the other hand, students in the SE seasons wereinvolved in differenttasks, which allow them to be alternatively active and engaged during class time (practicing, officiating, coaching, etc.). Thus, the challenge wasto promoteincreasesin engagement without losing the central role of the students in organizing, deciding, and developing the activities (Mesquita, Pereira, Araújo, Farias, & Rolim, 2016; Smither & Xihe, 2011). However, it is noteworthy that in the SE season, the outcomes regarding the students' engagement suggest that SE was successful in increasing significantly three of its four sub-scales: students' perceptions of dedication, vigor, and enthusiasm. Indeed, several authors (e.g., García-López, Gutiérrez, Gonzalez-Víllora, & Valero Valenzuela, 2012; Wahl-Alexander, Curtner-Smith, & Sinelnikov, 2016) have argued that the feeling of belonging to the same team throughout the season proves to be a factor that increases enthusiasm. Likewise, the cooperative work and the alternative rolesduring the implementation of the SE seasonseem to have been crucial to enhance students' dedicated and vigorous participation in PE classes(e.g. Gutierrez Diaz del Campo, García López, Chaparro Jilete, & Fernández Sánchez, 2014; Perlman & Goc Karp, 2010; Wallhead & Ntoumanis, 2004).Perhaps the fact that students had been taught by an experienced SE teacher in the Menickelli and Hastie study (2014) was significant in the development of students' confidence, contrary to our study, in which students were taught by PSTs, and despite theimprovements, theywere not significant. The review of research developed by Bessa et al. (2019) regarding students' development of personal and social skills within a SE season, indicates that only 14% of studies (7 studies) resort to comparison with a TT. Of these, only one study (Burgueño, Medina-Casaubón, Morales-Ortiz, Cueto-Martín, & Sánchez-Gallardo, 2017) had PSTs teaching the PE classes. It is recognized the importance of providing PSTs opportunities and time to develop learning opportunities that will contribute to their future work (Romar, Aström, & Ferry, 2018).Despite the literature on the experiences of PSTs in teaching SE identifies a set of difficulties, such as the omission of vital aspects of the model (Curtner-Smith, Hastie, & Kinchin, 2008; McCaughtry, Sofo, Rovegno, & Curtner-Smith, 2004) or problems in encouraging students to work with each other (McMahon & Macphail, 2007), the outcomes of our study suggest that PSTs who taught SE were able to createfavorable conditions for the development of personal and social responsibility. Concerning engagement, the PSTs only struggled with the development of students' confidence. These results highlight the effectiveness of the PETE program that the PSTs attended, which takes into account Curtner-Smith's(2012) recommendations concerning the provision of practical experiences (as both learners and teachers) with different approaches and teaching models, all while being supervised by experienced teachers. Moreover, the results of this study provide support for SE as a viable option for providing students with new experiences, and as a feasible teaching model for teachers in order to promote personal and social responsibility and engagement in PE.

Considering the strengths of this study, it is worth mentioning: 1) the measurement and report of the teacher's fidelity to teach each model; 2) the use of a large sample in different schools; and 3) the length of the SE season in twenty-four 45-minute classes, fulfilling the duration suggested bySiedentop et al. (2020) for an SE season.However, this study has limitations: 1) the classes already formed in schools make it difficult to randomize participants and, consequently, the possibility to generalize results to other populations; 2) the use of self-reports to evaluate the variables; and 3) the use of different teachers to teach different instructional approaches.

**Conclusions**

The results of this research have shown that SE, when compared to a TT approach, provides greater improvements in students' personal and social responsibility and does not differ on students' engagement. These findings contribute to emphasize the need to rethink the teaching process in PE classes, particularly the progression from traditional PE lessonstowards a more constructivist approach. It is in these lessons thatstudents can adopt an active role that promotes their personal and social development.

Considering the past research suggestions (Araújo et al., 2014; Hastie, Martinez de Ojeda, & Calderón, 2011; Wallhead & O'Sullivan, 2005), as well as the recommendations for the development of social and emotional learning programs, future studies should involve multiple seasons/units, in a more longitudinal data collection protocol.In order to reduce the *teacher effect* that may occur when different teachers teach different instructional approaches (Browne et al., 2004), future research must use the same teacher in the same grade to teach all the groups.Seeking to strengthen the positive impact of different teaching models, it would also be relevant for future research to consider variables (such as empowerment, self-confidence, creativity, or assertiveness), that meet the best interests and needs of today's young people.The findings of the current study can be further explored with qualitative methodologies seeking additional explanations that can improve our understanding.

In conclusion, this research suggests the suitability and educational potencialof the SE in PE classes, as well as its methodological and practical effectiveness, namely in the development of students' engagement and responsibility. Recognizing the effectiveness of SE, PE teachers can use it as a tool to help them develop skills that can help students succeed as learners, facilitate their inclusion in society, as well as the transition to adulthood.

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