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Developing Responsibility through Action Research: Implementing Hellison's Model as a Whole-School Approach in Primary Education

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Abstract: In the past few years, there has been a growing interest in the use of Hellison's Teaching Personal and Social Responsibility (TPSR) model both in sports and Physical Education (PE) programs and in broader pedagogical interventions. TPSR helps individuals adopt habits and set behavioural goals, based on a culture of responsibility both within and outside of school contexts. The present study describes a TPSR participatory action research intervention conducted at a primary school in an urban area of Attica in Greece, as a whole-school approach that could help students develop responsible habits and attitudes. Ninety-one (91) students (boys=48, girls=43, aged 8 to 12 years) from grades 3-6 participated in the study, together with four generalist teachers, the PE teacher, and the school principal. Data was collected pre- and post with the Greek version of the Personal and Social Responsibility Questionnaire (PSRQ) (quantitative data), along with qualitative data, from teacher reflective journals, and classroom observations. A mixed methods ANOVA (time x grade) was used to evaluate the effect of the intervention on students' personal and social responsibility, while qualitative data were analysed thematically based on the TPSR levels of responsibility. Results showed that there was a statistically significant main effect of time, with students exhibiting higher levels of personal and social responsibility at the end of the intervention. Qualitative data analyses revealed that teachers' goal setting and ongoing reflection contributed to students' responsibility and positive behavior development. The importance of action research as a proactive and reactive approach to educational transformation was mentioned by all participants. These findings highlight the need to prepare the ground for implementing TPSR as a whole-school approach that foregrounds the building of strong and trusting relationships as critical to reconnecting students with the broader school culture.

Keywords: Mixed Methods Design, Physical Education, Teaching Personal and Social Responsibility, Undesirable Behaviors.

1. Introduction

Nowadays, teachers experience an increase in students' undesirable behaviors, both in the classroom and within the school in general, and this situation seems to negatively affect teacher-student relationships (de Lemos *et al.,* 2024; Iqbal & Zahoor, 2024). Undesirable behavior is any type of behavior that irritates the student and the people he/she interacts with, causing unpleasant feelings to him/her and to the people around him/her (Jacob & Aloka, 2023; Ngwokabuenui, 2015; Adeniyi & Akinola, 2020). Among others, undesirable behaviors are behaviors related to aggression, violence, and a reduced sense of responsibility both for individual actions, and action related to school wider interactions (e.g., the misuse of school equipment and facilities, lack of respect for others, etc.). Arbuckle and Little (2004) indicate that undesirable behaviors hinder educational processes, making students not listening to the teacher, making noise, causing mischief, etc. Furthermore, potential reasons for the increasing occurrence of undesirable student behaviors in recent years include both individual factors (e.g., personality issues) and environmental factors such as limited parental involvement, divorce, or

lack of social support programs (Gómez-Mármol *et al.,* 2018; Granero-Gallegos *et al.,* 2019; Jacob & Aloka, 2023; Iqbal & Zahoor, 2024; Närhi *et al.,* 2017) or low socioeconomic levels (Kazak & Koyuncu, 2021; Lekli, 2020; Poursanidou, 2016; Teyfur, 2015). Therefore, dealing with undesirable student behavior is a complex and challenging task for the teachers. After determining the causes of the undesirable behavior, the teacher will need to explore ways to deal with it effectively (Yuan & Che, 2012). For this reason, the greatest challenges facing educators at all grade levels are, on one hand, to investigate and understand the nature and causes of student behaviour (Dania & Farias, 2024) and, on the other hand, to develop teaching strategies that will allow them to prevent, limit, or even eliminate undesirable behaviors for the benefit of all students (Hellison, 1985, 2010; Lekli, 2020; Teyfur, 2015).

Relevant research shows thatthe strategies used by teachers in order to reduce undesirable behaviors are the use of classroom reminder rules (Özmen, 2020), calling students' names (Supaporn, 2000), giving advise (Kazu, 2014), and encouraging desirable behaviors with the use of eye contact, as well as using body language (Özer, 2009). However, there are studies also mentioning that teachers may also use punishment as a strategy to deal with undesirable behaviors (Perera & Diliberti, 2023; Teyfur, 2015). In this situations, teachers seem to adopt various reactive classroom management measures, depriving students of recess, report the problem to the school administration (Kazu, 2014), or to their parents (Özmen, 2020), and excluding students from scheduled classroom activities dealing with behaviors, complain refuse to perform their duty, The above measures seem to deprive students from caring classroom relationships, something, which may affect their future lives (Teyfur, 2015).

In countries such as the USA, South Korea, Malaysia, and Spain (Hayden *et al.,* 2012; Jiménez-Parra *et al.,* 2024; Pozo *et al.,* 2018; Salamuddin, 2001; Salamuddin & Harunb, 2010; Toivonen, 2021; Yung & Wright, 2012), Hellison's Teaching Personal and Social Responsibility (TPSR) model for developing individual and social responsibility has been applied within school interventions, as a model that could help teachers deal with undesirable student behaviors at a proactive level. This model, initially developed in the 1970s by Don Hellison, uses physical activity as a context that can help students understand and reflect on their own behaviors as well as on the results of their decisions on other aspects of their lives or on their peers (Hellison, 2010). Within Physical Education (PE) contexts, the TPSR model builds on physical activity to encourage students to implement positive individual and social behaviors within classroom activities that use shared goal setting, reflection, and group discussion (Hellison, 2010). The TPSR model encourages students to recognize the concept of responsibility across six basic levels or responsibility spaces: (a) Irresponsibility, (b) Respect, (c) Participation and Effort, (d) Self-Direction, (e) Care, and Transfer. Respect and care refer to social responsibility, and the others refer to personal responsibility (Table 1).

TPSR enables students to understand and fulfill their basic needs and motivates them to participate in PE by adopting an active lifestyle. That is the reason why the development of personal and social responsibility is adopted as a key goal within modern pedagogical frameworks, especially in learning environments that promote autonomy, respect, and collaboration. Social pedagogy, as presented by Dania (2024) within PE settings, offers a theoretical framework that focuses on cultivating empathy, social connection, and caring through interpersonal learning relationships. By incorporating human-centered practices into teaching, educators can shape pedagogical environments that enhance students' sense of community and personal responsibility. As it was shown in the study by Prat *et al.* (2019), TPSR, when adopted under a human-centered perspective, positively affects student participation in classroom activities, in contrast to traditional teaching approaches. According to Jung and Wright (2012), TPSR can bring significant growth in understanding of respect and improvement in students' ability to control their behavior. Through the use of the model, students develop a greater awareness of the value of effort and hard work within activities that build on awareness talks, group meetings, and self-reflection time, which are used in relation to cultural specificities and educational norms. Similarly, other studies have shown that through the use of the TPSR model, responsibility can be transferred outside classroom settings since the model provides leadership opportunities and a variety of choices to students so that they can adjust more easily based on their daily realities (Baptista *et al.,* 2019; Hellison, 2010; Sánchez-Miguel *et al.,* 2025). In this way, the teacher-student relationship is facilitated, since students' needs are supported more efficiently, something which brings gains to their academic growth (i.e., increased effort in class, positive communication with teachers) (Baptista *et al.,* 2020).

Table 1. Student responsibility levels with their corresponding components. Retrieved from (Hellison, 1985, 2010)

Levels of Responsibility	
Level	**Defining Features**
0 **Irresponsibility**	Negative attitude Disrupting the class Lack of respect for classmates and the teacher Tolerate difference
1 **Respect**	Students demonstrate basic respect: they do not interrupt, they do not disturb others, and they listen attentively. The emphasis is on creating a safe and positive learning environment.
2 **Participation and Effort**	Trying to participate Accepting direction Showing self-control under supervision Starting to explore beyond comfort zones
3 **Self-direction**	Setting and pursuing personal goals Participating without supervision Regulating yen-self Taking responsibility
4 **Caring**	Showing support and compassion Being considerate Cooperating Helping others
5 **Transfer**	Transfer responsible behavior to other settings (home, community, other activities)

As part of the aforementioned positive effects, students' social and emotional development was particularly evident in domains such as the perceived care from adults, increased effort and persistence in sport-related tasks, a heightened sense of personal responsibility and commitment to peers, and the capacity to act as role models for younger students—findings that are consistently reported in research employing the TPSR framework (Prat *et al.,* 2019). Recent studies further substantiate these outcomes. Martins *et al.* (2022), for example, demonstrated that an adapted TPSR program for institutionalized youth fostered prosocial behaviors, empathy, and compliance with group norms. Similarly, Carreres-Ponsoda *et al.* (2021) observed that the application of TPSR in competitive sport contexts promoted responsibility, motivation, and inclusion within team dynamics. In line with these findings, Jiménez-Parra *et al.* (2024) documented that TPSR-based pedagogical interventions in primary education facilitated students' autonomy, peer support, and leadership behaviors across multiple subject areas. Collectively, this body of evidence underscores the potential of TPSR to enhance students' socio-emotional competencies in both educational and extracurricular contexts.

In relation to undesirable behaviors, many studies implementing TPSR report positive results in student behavior, such as increased respect, effort, autonomy, and caring (Yung & Wright, 2012). Researchers support that TPSR positively influences students' participation, their perception of their basic psychological needs, motivation for physical education, and active lifestyle (Pozo et al., 2018; Manzano-Sánchez *et al.,* 2019; Barrero *et al.,* 2017). Further, the model significantly promotes students' social development and their ability to respond to dilemmas related to sports (Salamuddin, 2001; Salamuddin & Harunb, 2010) also confirms that. The above effects seem to support students in addressing aggression and disruptive behaviors, self-control, caring, conflict resolution, responsibility, empathy, self-confidence, self-esteem, and self-efficacy (Pozo *et al.,* 2018), motivation (Barrero *et al.,* 2017), and participation (Manzano-Sánchez *et al.,* 2019). When transferred both outside the school context and in other subjects apart from PE (i.e., language, mathematics, physics, general education),

such findings could support the relevance of using TPSR in a variety of educational contexts and purposes. As it was proposed by relevant research (Jiménez-Parra *et al.,* 2022), the educational, geographical, and cultural reach of TPSR (Jiménez-Parra *et al.,* 2022; Pozo *et al.,* 2018; Salamuddin, 2001; Salamuddin & Harunb, 2010) could add valuable information to the use of the model for transforming educational processes and reducing students' undesirable behaviors. However, until today, there are indications that even though PE teachers need to develop social skills in students, not all teachers are aware or confident to the uses of the TPSR model (Romar *et al.,* 2015). For this purpose, it is important that the use of the model is spread through research and studies that use TPSR within various educational contexts and approaches, as a model that can inform the promotion of desirable student behaviors both in PE and in other subjects. Studies of this kind can promote the professional development of teachers through the acquisition of new resources, knowledge, and an increase in their motivation to trace and understand students' (un)desirable behaviors (Sánchez-Alcaraz *et al.,* 2019).

Based on the above, the aim of the present research was to use the TPSR model as a whole-school approach to develop students' personal and social responsibility and improve strategies for dealing with their undesirable behaviors, both in PE and in other compulsory school subjects.

2. Method

2.1. Research Design

The present study adopted a mixed-methods participatory action research (PAR) design, aiming to investigate the implementation of the Teaching Personal and Social Responsibility (TPSR) model as a whole-school approach in primary education. The integration of quantitative and qualitative methods allowed for a comprehensive examination of both measurable outcomes and contextualized pedagogical processes, in line with current methodological recommendations for TPSR-based interventions (Gray *et al.*, 2019; Shen *et al.,* 2022).

The participatory action research framework followed two iterative cycles comprising the phases of planning, action, observation, and reflection, enabling continuous refinement of instructional practices and collaborative decision-making among participants. This cyclical design strengthened ecological validity and supported the alignment between research objectives and everyday school practice.

2.2. Participants

Participants in this study were (a) 91 primary school students (aged 8 to 12 years) attending third grade (10 boys and 9 girls), fourth grade (10 boys and 6 girls), fifth grade (17 boys and 15 girls), and sixth grade (10 boys and 14 girls) at the same school and (b) four general primary school teachers (Male=1, Female=3) from grades 3-6, in collaboration with the school's PE teacher and school principal. During the 2023-2025 school year, all participants were involved in a year-long school-wide TPSR intervention program aimed to improve strategies for dealing with student undesirable behavior through the development of responsibility, according to the TPSR model. All teachers had more than 5 years of working experience in primary education and were novices in the use of the model. Both the PE teacher and the school principal were experts in the use of TPSR, having attended professional development seminars on designing, evaluating, and implementing lessons using the model.

The dual role of the principal as both researcher and school leader was addressed through systematic reflective practices and collaborative validation procedures, as described below, to mitigate potential researcher bias.

2.3. Procedures and Settings

Using participatory action research (Chevalier, 2019), teachers designed a TPSR intervention specifically aimed at dealing and decreasing students' undesirable behaviors. The TPSR model was implemented across physical education lessons and selected classroom-based activities, following Hellison's (2010) structural framework. The PE teacher applied the model during two weekly lessons per class, while classroom teachers incorporated TPSR principles into daily teaching practices.

Intervention fidelity was monitored using multiple complementary strategies: a) Structured lesson plans aligned with TPSR levels (respect, participation, self-direction, leadership, transfer). b) Regular reflective meetings (whole-group plenaries) involving teachers and the researcher. c) Systematic use of teacher reflection journals, and d) Application of the Tool for Assessing Responsibility-based Education (TARE 2.0) to

document instructional strategies and student behaviors.

These procedures allowed for continuous monitoring of adherence to TPSR principles across different teachers and learning contexts, addressing concerns related to implementation consistency.

Particularly, the generalist teachers were trained at the beginning of the school year on how to conduct action research, specifically on participatory action research, the TPSR model, and the use of the Tool for Assessing Responsibility-Based Education (TARE) evaluation tool based on the principles of the model (Noroozi & Hatami, 2019; Wright & Burton, 2008; Wright & Craig, 2011). The TARE was selected as it can record changes in students' behavior and values (i.e., from selfish behavior to helping, respect, autonomy, and participation).

The training was carried out by the second author, a PE teacher from another school in Attica, who had many years of experience at a practical and educational level in her school, the PE teacher, and the principal. The training lasted two months (December 2023 - January 2024), for a total of 15 hours.

Participatory action research was chosen because groups of teachers work together (Frankham & Howes, 2006) and there is collaboration between teachers and researcher (Avgitidou, 2009). During all phases of action research, the group members typically maintain equitable participation, with roles adapting to context and participant needs, fostering shared understanding, democratic decision-making, and concerted action within an ethical framework (Feekery, 2024; Bacquet, 2024). Participatory models stress the empowerment of all stakeholders, advocating for consensus-oriented collaboration (Mat Noor & Shafee, 2021; Bacquet, 2024). Moreover, recent discussions on ethics in action research emphasize negotiated power dynamics, equitable role distribution, and transparency as foundational to responsible and effective inquiry (Levitan, 2019; Olin, 2023).

Participatory action research was implemented as a recursive process, developing two iterative cycles that included four distinct stages [planning, action, observation, and reflection]. It was a spiral process of professional development with adaptable steps (Kemmis, 1988; Leitch & Day, 2000; Mclntyre, 2007; Noffke & Somekh, 2005) (Figure 1). For the purposes of the present study, the participatory action research circles were conducted in four phases:

a) Phase A - Consideration and Analysis of the Situation (i.e., reflecting on the amount and type of undesirable student behaviors at the school based on screening with the use of the Personal and Social Responsibility Questionnaire (PSRQ)) (September 2023 - November 2023),

b) Phase B - Planning (i.e., using TPSR as a foundational framework for exploring ways and instructional strategies that could decrease or prevent undesirable behaviors) (December 2023 - January 2024)

c) Phase C – Intervention Program - Action (i.e., development of an action plan at a school level implementing TPSR) (February 2024 - April 2024) and

d) Phase D - Implementation-Evaluation (i.e. evaluating potential changes in students' behaviors with PSQR and refining the intervention plan) (May 2024 - June 2024).

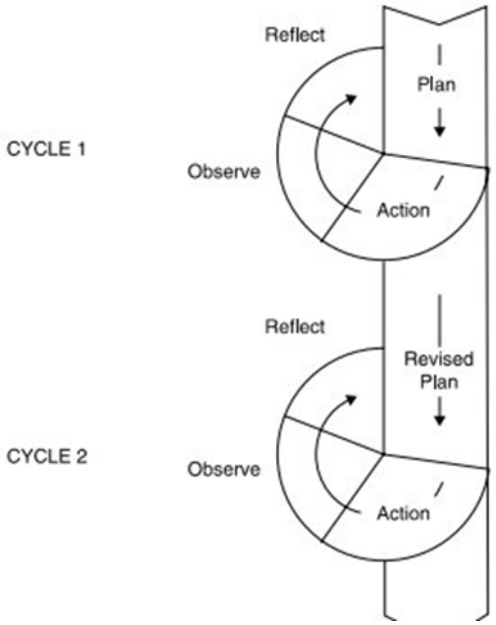

Figure 1. The Cyclical Action Research model, based on Kemmis & McTaggart (1988)

The intervention program (Phase C – Action) lasted 12 weeks and was designed according to the basic principles of TPSR. Based on the initial evaluation of students' undesirable behaviors, all participating teachers attuned their teaching sessions so that they all followed the same goals and frames of action. The action phase involved the implementation of targeted activities, including inclusive games, the assignment of leadership roles (e.g., captains, referees), behavioral assessment through rubrics, use of motivational systems (e.g., medals, stamps, free time), and

structured responsibilities for individuals and groups. During the intervention, all participating teachers dedicated approximately two to five hours per week to introducing, discussing, and acting on topics related to personal and social responsibility. In addition, they participated in joint reflection and evaluation of the weekly goals that had been set in collaboration with the students, cultivating a consistent and supportive learning environment that reinforced the values promoted in PE lessons. The goals set by all participants, along with the indicative activities per goal, are shown in Table 2. This study was conducted following the Declaration of Helsinki and was approved by the Institutional Review Board (or Ethics Committee) of the School of Physical Education and Sport Science at the National & Kapodistrian University of Athens, Greece (protocol number 1531/17-05-2023). Also, written parental consent was secured for student participation. All participants were assured anonymity and confidentiality.

Given the participatory nature of the study and the researcher's dual role, reflexivity was systematically addressed through ongoing self-reflection, peer discussion, and transparent documentation of decision-making processes, reducing the risk of role-related bias.

Table 2. Intervention goals and illustrative activities

Intervention goal	Illustrative activities
Promoting personal and social responsibility	• Co-creation of classroom contracts (students proposed and signed agreed-upon rules). • Weekly "classroom leaders" responsible for class order, materials, and cleanliness. • Hellison's Levels of Responsibility were presented and discussed, with students setting personal goals for behavior and participation.
Enhancing self-regulation and emotional control	• Goal-setting exercises (e.g., *"I will try to control my anger during the game"*). • Discussions after incidents (e.g., conflict resolution in class or during PE). • "Silent lessons" to encourage reflection on behavior.
Fostering cooperation and teamwork	• Cooperative storytelling projects presented to the class. • Group assignments in science experiments with rotating roles. • Peer feedback sessions following group tasks.
Building empathy and respect	• Reading and discussing the fairy tale *The Shoes of Others* to cultivate empathy. • Role-play and drama activities addressing bullying or disrespectful language. • Sharing personal experiences in class discussions.
Encouraging leadership and agency	• Leadership promotion in PE lessons (students leading warm-up, organizing games). • Assigning referees, organizers, and assistants in sports. • Older students mentoring younger ones in agreed playground activities.
Supporting inclusion and equity	• Modified games in PE, ensuring participation regardless of skill level. • Grouping strategies to mix abilities (heterogeneous groups in board game activities). • Peer-mediated support for students with lower engagement.
Promoting skills transfer beyond school	• Weekly reflection discussions in PE and class linking responsibility skills to daily life (e.g., home, sports, community). • Playground agreements and contracts created by students for fair play. • Discussions at swimming lessons on applying self-control outside school.

2.4. Data Collection Process

Data concerning students' responsibility levels were collected with the use of the Greek version of the Personal and Social Responsibility Questionnaire (PSRQ), originally developed by Li *et al.* (2008). PSRQ has been used and validated in several studies abroad (Agbuga *et. al.,* 2015; Hsu *et al.,* 2014; Martins *et al.,* 2015). A back-translation process was followed to ensure the validity of the translation, and the instrument was culturally adapted and standardized for use with Greek elementary students by Agiasotelis *et al.* (2017). The PSRQ consists of 14 items designed to assess four levels of the TPSR model: effort (4 items), self-direction (3 items), respect (3 items), and helping others (4 items). It should be noted that the PSRQ was scored on a 6-point Likert scale where lower values represent higher levels of responsibility (1 = Strongly Agree, 6 = Strongly Disagree).To ensure statistical consistency, all negatively worded items (e.g., "I disturb others") were reverse-coded. Following this procedure, a score of 1 consistently indicated the highest level of responsibility across all items. The questionnaire was administered to the 91 students before and after the intervention, allowing for within-subject comparisons.

One item ("I don't set goals at all") was negatively worded and was reverse-coded during the data analysis process. To assess the reliability of the instrument within the present study, Cronbach's alpha coefficients were calculated. The scale demonstrated acceptable internal consistency, with values of α = .78 (pre-test) and α = .71 (post-test) for the social responsibility dimension, and α = .79 (pre-test) and α = .73 (post-test) for the personal responsibility dimension. These values are consistent with prior validations of the instrument in international and Greek educational contexts (Agbuga *et al.,* 2015; Escartí *et al.,* 2015; Hsu *et al.,* 2014; Martins *et al.,* 2015).

Qualitative data were collected through: a) Semi-structured interviews with participating teachers. b) Teacher reflection journals. c) Field notes and systematic classroom observations. d) TARE-based observation rubrics.

Data collection occurred throughout the intervention and during final reflective meetings, supporting an in-depth understanding of instructional processes and student behavioral changes.

More detailed, as part of the action research process, participating teachers consistently maintained open-format reflective journals, which functioned as tools for critical reflection and documentation (Efron & Ravid, 2019). These journals included both in-class and out-of-class observations, capturing key events such as collaboration, conflict, and student engagement, as well as the teachers' emotional responses, pedagogical insights, and evolving thought processes. In parallel, participants employed responsibility-focused teaching rubrics, which are analyzed separately in the following sections.

Further field notes, maintained by both the school principal and the participating educators, record key successes and challenges, such as peer conflict resolution and notable behavioral milestones. Finally, during the reflection phase, regular debriefing meetings among participants allowed for critical discussion, collaborative evaluation, and timely pedagogical adjustments based on the evolving needs of the students. Reflection journals are widely recognized in educational research as a valuable method for capturing contextual and process-oriented data that may not be evident through quantitative measures alone (Cohen *et al.,* 2017; Creswell & Poth, 2018). Teachers were encouraged to record their observations regularly, focusing on both expected and unexpected outcomes, interactions among students, and their reflections on the teaching process. Examples of data generated through reflection journals are shown in Table 3.

2.5 Data Analysis

In this study, a mixed methods approach was employed in order to provide a more comprehensive understanding of the phenomenon under investigation (Creswell *et al.,* 2011). The integration of quantitative and qualitative data allowed for both breadth and depth in the analysis. Quantitative methods contributed to establishing the validity, reliability, and potential generalizability of the findings, while qualitative methods enabled the exploration of more nuanced, context-specific insights into the underlying processes and meanings associated with the observed behaviors (Creswell *et al.,* 2011).

Particularly, quantitative data were analyzed using repeated-measures ANOVA to examine pre–post differences in personal and social responsibility. The level of statistical significance was set at .05. Effect sizes were calculated using partial eta squared (η^2). According to Cohen's (1988) guidelines, the observed values (η^2 = .112 and η^2 = .091) represent moderate to large effects, indicating that the TPSR intervention had a practically meaningful impact despite the modest sample size.

Table 3. Illustrative observation journal entries from classroom teachers, PE teacher, and principal-researcher

Date	Teacher Class	Activity	Student Engagement	Behavioral Observation	Classroom Interactions	Reflections Notes
19/02/2024	Teacher D-Grade 4	Creation of a class contract co-written with students	High- Most students contribute rules and ideas	Students proposed rules reflecting respect and cooperation, and minor disagreements were resolved through discussion	Positive collaboration high sense of ownership signed the final contract	Co-creation increased responsibility, which will be revisited in 4 weeks to check adherence
25/03/2024	Teacher D-Grade 4	Cooperative storytelling project	Medium- High Groups worked on fairy tales collaboratively	Two students collaborating successfully were rewarded with cooperation tokens; other groups required encouragement.	Groups shared work fairly, and feedback after the presentation promoted inclusion	Cooperation tokens reinforced teamwork, and we will consider peer assessment for future projects
06/02/2024	PE Teacher-Grade3	Modified games for inclusion	High- All students actively participated regardless of skill level	Students rotated rules; one student needed a brief reminder on fair play.	Inclusive team participation, minimal conflicts	Modified games are effective for engagement, continue integrating role rotation
21/02/2024	PE Teacher-E1 Class	Goal setting for behavior during PE	Medium- Engagement varied, some students enthusiastic, others passive	Example goal: "I will try to control my anger during the game". Some students struggled to apply the goal during the activity	Leadership roles were distributed, and some peers encouraged others	Need ongoing teacher support, class not yet autonomous

To further validate the robustness of the findings, a post-hoc power analysis was conducted using G*Power 3.1. With N = 91, α = .05, and the observed effect sizes, statistical power exceeded .90 (1–β > .90), surpassing the recommended threshold of .80.

Qualitative data derived from the teachers' observation journals were analyzed by using reflexive thematic analysis, following the six-phase framework proposed by Braun and Clarke (2006, 2019, and 2021). To enhance trustworthiness and analytic rigor, several strategies were employed: a) Methodological triangulation, integrating interviews, journals, observations, and quantitative findings, b) Data source triangulation, involving multiple teachers across grade levels, c) Peer debriefing during reflective plenaries, where emerging interpretations were discussed and critically examined, d) Audit trail documentation, including coding decisions and theme development. Although a single primary coder conducted the initial analysis, credibility was strengthened through collaborative reflection and cross-validation with participating educators, consistent with qualitative standards in participatory research (Nowell *et al.*, 2017).

Triangulation was a central methodological principle of the study, aiming to enhance internal validity and explanatory depth. Quantitative findings from the PSRQ were systematically compared with qualitative evidence from interviews, observation rubrics, and reflective journals. Convergence of data across methods and sources provided robust support for

identified patterns, particularly regarding changes in responsibility levels, classroom climate, and teacher practices. Discrepant cases were examined analytically rather than excluded, contributing to a nuanced interpretation of findings.

This method allowed for a systematic identification, organization, and interpretation of recurring patterns and themes related to the design, implementation, and reflection phases of the intervention program. A combination of inductive and deductive coding was employed: while some initial codes emerged organically from the data, others were informed by the core principles of the TPSR model. The coding framework included categories such as lesson planning, instructional adaptations, student engagement, teacher reflection, and the promotion of responsibility-related behaviors (e.g., respect, effort, cooperation, self-direction, and caring). The data were reviewed iteratively, with increased focus given to how teachers perceived and documented their evolving role, classroom dynamics, and the attainment of weekly goals jointly established with students. This process enabled a nuanced understanding of both the pedagogical strategies employed and the contextual challenges encountered during the program.

3. Results

3.1. Quantitative Findings: Personal and Social Responsibility (PSRQ)

Quantitative analysis examined pre–post changes in students' personal and social responsibility following the TPSR-based intervention. Repeated-measures ANOVA revealed statistically significant improvements across both dimensions of responsibility.

For social responsibility, a significant main effect of time was observed, indicating meaningful differences between pre- and post-intervention scores ($p < .01$). Similarly, personal responsibility demonstrated a statistically significant improvement following the intervention ($p < .01$). As the PSRQ employs reverse scoring, lower post-intervention scores indicate higher levels of responsibility, reflecting enhanced awareness, self-regulation, and social accountability among students.

Effect size analysis showed moderate to large practical significance, with partial eta squared values of $\eta^2 = .112$ for social responsibility and $\eta^2 = .091$ for personal responsibility, according to Cohen's (1988) guidelines. To assess the adequacy of the sample size, a post-hoc power analysis was conducted using G*Power 3.1. With N = 91, α = .05, and the observed effect sizes, statistical power exceeded .90 ($1–\beta > .90$), indicating that the study was sufficiently powered to detect the observed effects. These findings suggest that the TPSR intervention had not only statistical but also educationally meaningful effects, despite the absence of a control group.

In addition, although inferential comparisons between grades were not the primary analytical focus, descriptive trends indicated differential developmental trajectories. Lower grades (Grades 1–3) showed greater improvements in rule-following and cooperative behaviors. Middle grades (Grades 4–5) demonstrated notable gains in self-direction and shared responsibility. Grade 6 students exhibited the highest post-intervention responsibility levels, particularly in leadership, autonomy, and peer support. Importantly, pre-existing differences between classes were substantially reduced post-intervention, indicating increased homogeneity in responsibility-related behaviors across the school.

The results of the mixed ANOVA revealed a statistically significant main effect of time, [$F(1, 89) = 10.84$, $p = .001$, partial $\eta^2 = .112$]. Particularly, students' personal responsibility scores decreased after the intervention (Pre: $M = 1.77$, $SD = 0.67$; Post: $M = 1.51$, $SD = 0.39$), indicating improvement, given that the scale was reverse-coded. The time × grade interaction was not significant, $F(4, 89) = 1.71$, $p = .155$ (Figure 2).

The ANOVA results also revealed a significant main effect of time, [$F(1, 89) = 8.61$, $p = .004$, partial $\eta^2 = .091$]. Particularly, students' social responsibility scores also decreased after the intervention (Pre: $M = 1.65$, SD = 0.61; Post: $M = 1.44$, $SD = 0.37$), indicating improvement. The time × grade interaction was not statistically significant, [$F(4, 89) = 2.05$, $p = .095$], though the effect approached significance (Figure 3).

3.2. Qualitative Findings: Thematic Analysis of Teacher Interviews, Journals, and Observations

Thematic analysis of the reflective journals revealed four overarching themes: a) teaching strategies for promoting responsibility, b) student behavioral patterns, c) grade-specific reflections, and d) implementation challenges. In the paragraphs below, the four different themes are presented in relation to excerpts from the journals.

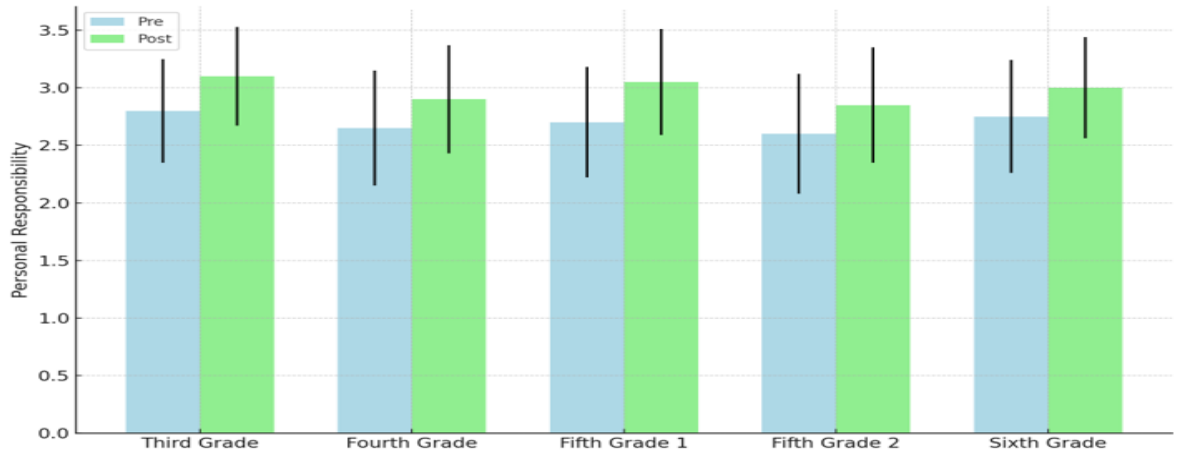

Figure 2. Personal responsibility scores by class before and after the intervention.

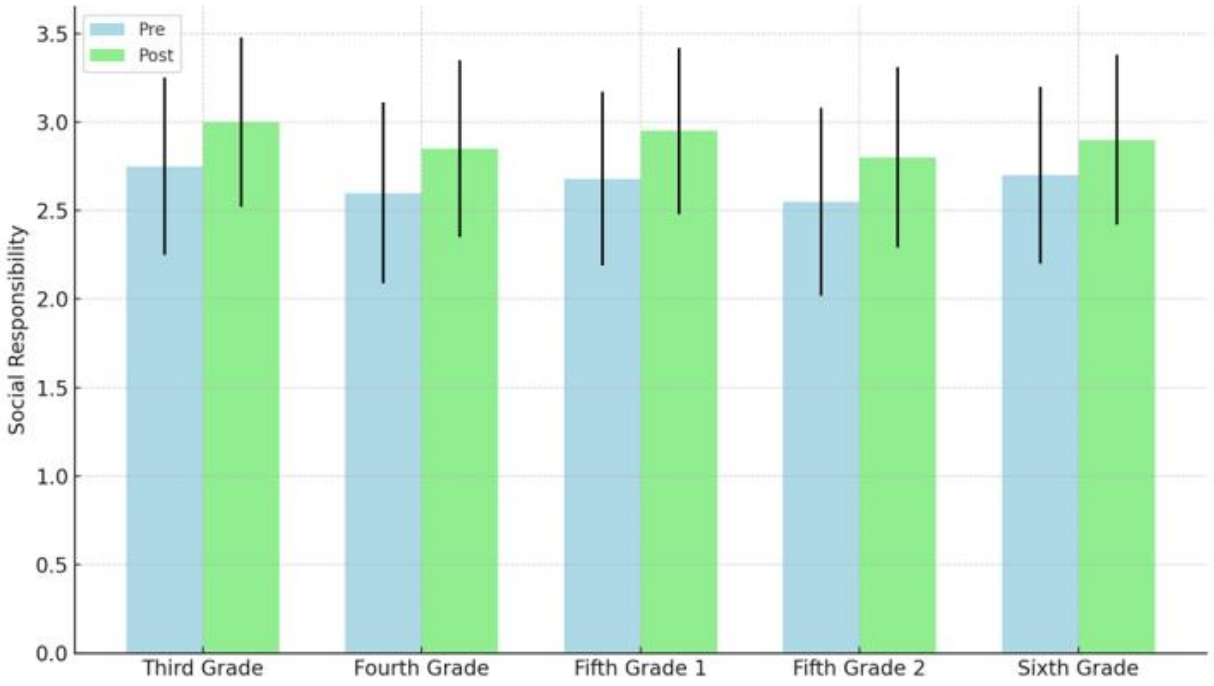

Figure 3. Social responsibility scores by class before and after the intervention.

3.2.1. Teaching Strategies for Promoting Responsibility

Across the data, a wide array of pedagogical strategies emerged that contributed to the development of personal and social responsibility. Teachers implemented a variety of pedagogical techniques to enhance students' sense of personal and social responsibility. These included co-created classroom contracts, responsibility roles, structured cooperative activities, and empathy-based interventions.

In relation to the teaching strategies, it was shown that they often implemented classroom contracts co-created with students to foster ownership and accountability. As recorded by Teacher D (journal entries: 19/02/2024–04/03/2024):

"…I asked the students to write me their own classroom rules so that we could create the classroom contract together. After reading and discussing what the children wrote, the class contract was created by me and taking into account what the children wrote, it was completed. We read it, discussed it, and after we agreed, all students signed it…"

Constructive feedback and guided reflection were used to reinforce prosocial behavior. Teacher D (25/03/2024–13/04/2024) described:

"…We worked on the collaboration between two students to write their fairy tale… I rewarded them with large cooperation tokens… We continue to work on the class contract..."

Role assignments were systematically applied to cultivate leadership and accountability and also promote students' sense of responsibility, agency, and collaboration. As noted by Teacher D (journal, 27/04/2024–31/05/2024):

"…We worked on the institution of "classroom leaders". Every week, two students were responsible for the class. Their duties were to take care of the cleanliness and orderliness of the class, to clean the blackboard, to collect and distribute the class notebooks… Most of them did well and showed how responsible they are. As a reward, the students were given reward caps for their collection…"

In PE, responsibility was reinforced through role-based assignments such as referees, assistants, and organizers, as noted by PE Teacher (journal, 06-02-2024 Grade 4).

"…Assignment of specific roles (responsibilities-duties) to students (instructors, referees, etc.). Observation of students during modified games to achieve the goals that have been set…"

Cooperative activities and modified games were also designed to encourage teamwork and inclusion. As recorded by Teacher E2 (journal, 01/03/2024):

"…Activity within the framework of the Skills Workshops, we read the fairy tale The Shoes of Others to cultivate empathy… The discussion focused on recent incidents with behavioral problems, and we thought about how they could have been solved… if we had simply put ourselves in the other person's shoes…"

Teachers also employed visual tools such as responsibility pyramids to support self-assessment, as noted by Teacher D (journal, 2/2/2024–16/2/2024):

"…The model was presented to the students… We analyzed the characteristics of the levels and discussed them. The students themselves found their characteristics and put themselves on a certain level…"

The principal researcher also applied structured strategies, related to goal setting, as recorded by Principal-Researcher (journal, 29/1/2024):

"…The principal held the first discussion about responsibility with the children, presenting Hellison's levels of responsibility, as well as posters, to motivate them to set some goals. On the poster 'In 80 minutes, what would they do?', the children suggested: play one game without fighting, go out quietly when the bell rang, and solve an exercise without the teacher's help..."

The PE teacher applied TPSR-aligned strategies in physically active contexts, integrating guided discovery, peer teaching, and democratic decision-making. Emphasis was placed on inclusion and success for all, as noted by PE Teacher (journal, 6/2/2024, Grade 3):

"…Modified games to ensure opportunities for all students, regardless of ability to succeed. Even teamwork, success is rewarded..."

Self- and peer-assessment, shared leadership, and student planning featured prominently, as noted by PE Teacher (journal, 21/02/2024 and 05/04/2024, Grade 3):

"…The PE teacher asked the students to set a goal for a specific behavior… some took charge of the warm-up, some of the games… and some students positively guided others..."

"…Each group planned an activity to present in the PE lesson (goals, preparation). The students were responsible…"

Moreover, students were prompted to transfer life skills from PE to daily life, fostering responsibility beyond the school environment. As recorded by PE Teacher (journal, 22/04/2024):

"…During the weekly discussion, students were given the opportunity to look for examples of transferring life skills from sports and PE to everyday life and outside of school..."

Additionally, many were the journal entries that noted the TPSR model's potential to empower students' responsibility outside the school level. As recorded by Teacher D (15/04/2024-27/04/2024)

"…Also, the whole class showed its best in extracurricular activities. They kept the contract…"

As noted by PE Teacher (22-04-24, Grade 3)

"…At the end of the swimming lesson, the physical education teacher took the opportunity and during the weekly discussion, students were given the opportunity to look for examples of transferring life skills from sports and physical education to everyday life and outside of school..."

3.2.2. Student Behavioral Patterns

As shown by the journal entries, teachers documented various patterns of student behavior that evolved in response to the interventions. These involved increased self-regulation, cooperation, and initiative, though moments of dysregulation persisted.

In a classroom setting, Teacher E2 (16/02/2024) described:

"…Most students actively participated in the activity… However, one student withdrew and disrupted others… He was given the consequence of informing his parent, in the presence of the teacher..."

In PE, behavioral development was explicitly addressed. As described by PE Teacher (Grade 6):

"…Discussion at the beginning of the lesson on the importance of self-control… Feedback was given on both handball and on behaviors…"

A proactive approach was taken to behavioral goal-setting and anger regulation, particularly in team contexts. As recorded by PE Teacher (journal, 21/02/2024):

"…Students set goals for specific behaviors, e.g., 'I will try to control my anger during the game…"

3.2.3. Grade-Specific Reflections

However, behavioral challenges persisted. Conflicts arose in teamwork due to unequal role distribution and limited emotional regulation. Teacher E2 (journal, 22/02/2024) described a Grade 5 incident:

"…In a pair of students, whose interpersonal relationships fluctuate, the tension from the game triggered a verbal confrontation, resulting in the loss of self-control in the entire group. There was an immediate intervention by the teacher… Most students participated in the discussion, with some taking on the role of facilitator and mediator to calm the tension…"

PE lessons revealed similar dynamics. In Grade 6, resistance to rules and role responsibilities was observed, with not all students achieving full self-control. As noted by PE Teacher (journal, 19/04/2024):

"…The goals set were simple and realistic… there were large differences in the level of responsibility… Most achieved self-control, but not all (30%). Not all took the administrative tasks and roles seriously…"

At the same time, self- and peer-assessment supported reflective growth. As recorded by PE Teacher (journal, 19/04/2024, Grade 3):

"…With the method of self-monitoring and mutual teaching, the students themselves evaluated the skills and behavioral goals that had been set. They could simply evaluate the achievement or not of a goal with a nod…"

The principal researcher also observed behavioral dynamics during extracurricular activities such as swimming. As noted by Principal-Researcher (journal entries 15/04/2024).

"…During the swimming lesson, students complained about the coaches' shouting. Two students were off target (A. and Ag.). A discussion was held about self-regulation and responsibility during the activity..."

These practices demonstrate how responsibility was not only taught but also practiced through structured reflection and real-time behavioral choices.

In Grade 3, more advanced discussions on behavioral expectations and self-regulation were held, as noted by PE Teacher (journal, 26-02-2024):

"…A previous event served as a reason for discussion… Expectations for behavior were clearly presented…"

The principal's intervention in Grade 3 provided an age-appropriate scaffold for responsibility, using Hellison's levels and visual prompts: As noted by Principal-Researcher (29/1/2024):

"…The children suggested: play without fighting, go out quietly, and solve an exercise without the teacher's help..."

The principal-researcher tailored interventions to specific grades. For example, in E2, recorded by Principal-Researcher (journal, 17/05/2024).

"…The E2 students requested to play during breaks with a foam ball. After consultation with the staff, a four-week schedule was established for all classes, with student-agreed rules and responsibilities for the care of equipment and respectful play…"

Different grades demonstrated distinct developmental trajectories, highlighting the need for grade-specific insights. These reflections aim to capture the distinct patterns, challenges, and growth opportunities observed at each stage, providing a foundation for targeted educational strategies

Grade 3: Showed steady progress but required frequent reminders; demonstrated engagement in both classroom and extracurricular contexts. As noted by Teacher D (journal, 15/4/2024–27/4/2024):

"…The whole class showed its best in extracurricular activities. They kept the contract…"

As recorded by PE Teacher:

"… Grade 4: Demonstrated strong group cohesion, frequently reminding peers of expectations…"

"…Grade E1: High distraction and low self-regulation limited effectiveness…"

"…Grade E2: Showed strong engagement, initiative in peer mediation, and autonomous participation…"

"…Grade 6: Mixed results, with some students internalizing values and others resisting structure…"

Such differentiation reflects thoughtful pedagogical design that is consistent with students' cognitive, emotional, and social capacities.

3.2.4. Implementation Challenges

According to, while responsibility-based practices were broadly successful, teachers also encountered moments requiring adjustment or redirection. In one instance, during a group science activity, classroom management challenges arose due to inter-class dynamics, entered Teacher E2 (journal, 16/02/2024):

"…A student who had been placed temporarily in the class due to the absence of another teacher began to distract others… His behavior hindered the lesson… and required administrative intervention..."

For classroom teachers, implementation required consistent reinforcement of agreements and occasional interventions to manage conflict. The PE teacher's journals also revealed important implementation challenges in certain contexts. In E1 class, significant variability in responsibility levels and difficulty maintaining routines required constant teacher presence. As recorded by PE Teacher (journal, 20-05-2024):

"…The PE teacher's presence was more than necessary, as several students showed difficulty in following routines, norms, and rules… There was no collaboration with the classroom teacher to create a consistent framework, which significantly affected the program's results..."

In Grade 5, partial adoption of methods and the developmental phase of adolescence created resistance to some practices, limiting full autonomy. As noted by PE Teacher (journal, Grade 5).

"…Full autonomy was not achieved, making the PE teacher's role essential during lessons. The adolescent phase contributed to questioning methods and practices… In some groups, the PE teacher's presence was more than necessary to create conditions for constructive interaction…"

These reflections underscore that while responsibility-promoting strategies were effective overall, successful implementation required ongoing teacher support and adaptation.

Finally, in relation to the challenges encountered during the implementation of the TPSR intervention, teachers emphasized the need for sustained support, as behavioral improvements often required continuous intervention and guidance.

There was considerable variability in how different classes responded to the program, with some adapting more quickly and positively than others. Practical constraints also emerged, particularly regarding time limitations imposed by the broader curriculum and insufficient access to materials. As emerged in the plenary session of the participants in the teacher survey – Feedback. Noted Principal-Researcher recorded (journal entries, 22-03-2024).

"…The PE teacher raised the issue of time, noting that it was limited. He mentioned that, despite this constraint, they managed to engage students in various activities under agreed rules (games, escape room, treasure hunt) with designated leaders. [...] Overall, a positive outcome was observed across all classes…"

Furthermore, difficulties in parental communication were noted, especially concerning the return of consent forms and families' understanding of the intervention's purpose and scope. Based on the Principal-Researcher, journal observation: (19-11-2023)

"…The principal distributed the consent forms to the parents of the 6th Primary School of Marousi. Initially, 72 out of 91 parents responded positively. [...] The principal called 22 parents to ask why they had not signed the consent form. Many replied that they had not read the announcement carefully, others that they had not received it, and some that their children had forgotten it in their school bags..."

3.3. Aligning Quantitative and Qualitative findings

To enhance analytical clarity and align the qualitative findings with the TPSR theoretical framework, the four analytical themes above were then synthesized and reorganized according to the TPSR levels of responsibility. When the qualitative findings were examined in light of the TPSR framework, four synthetic themes emerged, each of which closely aligned with the TPSR principles and levels of responsibility (Table 4). These themes were:

a) *Systematic Integration of the TPSR Model into School Practices*, based on which teachers consistently reported that the TPSR levels functioned as a common pedagogical language, allowing students to reflect on their behavior using a common framework. Students were frequently encouraged to self-assess their level of responsibility ("Where do you think you are today?"), enhancing metacognitive awareness and behavioral accountability. This theme corresponded primarily to TPSR Levels 1-3 (Respect, Participation, Self-Direction).

b) *Developing Collaboration, Self-Regulation, and Conflict Management*, based on which teachers and observational data showed a clear reduction in disruptive behaviors and interpersonal conflicts over time. Strategies that emphasized collaboration, shared decision-making, classroom conventions, and reflective discussions contributed to a more democratic and emotionally safe learning environment. This theme reflected progress toward TPSR Levels 2-4, particularly effort, autonomy, and leadership.

c) *Emergence of Leadership and Peer Support (Upper Grades)*. In Grades 5 and 6, students increasingly assumed leadership roles, supported peers, and managed group activities with minimal teacher intervention. Leadership behaviors included organizing materials, mediating peer disagreements, and encouraging inclusive participation, indicating internalization of rules of responsibility. This theme aligned strongly with Level 4 of TPSR (Caring and Leading), and

d) *The Central Role of Teacher Collaboration and Reflective Practice,* based on which teachers emphasized that collaborative reflection, plenary sessions, and shared problem solving were critical to consistent implementation of TPSR. Where classroom teachers actively collaborated with the PE teacher, student progress was more pronounced, while limited teacher involvement hindered program effectiveness. This theme reinforced the importance of fidelity to implementation and professional learning, indirectly supporting all levels of TPSR.

Overall, the triangulation of multiple data sources (quantitative and qualitative) revealed strong convergence between student scores and classroom observations. Particularly, the PSRQ score changes corresponded to observed increases in student autonomy and social awareness, changes which were also reported in classrooms both by teachers based on TARE observations and by student self-assessments. Some discrepancies that were observed in data sources were interpreted as developmental variability (e.g., isolated peer conflicts), rather than as program failure. Overall, the integration of findings supports the conclusion that the TPSR intervention contributed to enhanced accountability, improved classroom climate, and increased student engagement.

Table 4. Mapping of qualitative themes to TPSR responsibility levels

Qualitative theme	Indicative behaviors / evidence	Corresponding TPSR level
Respect and rule compliance	Reduction of conflicts, adherence to safety rules, respectful interactions	Level 1 – Respect
Participation and cooperation	Active engagement in group tasks, shared responsibility, peer collaboration	Level 2 – Participation & Effort
Self-direction and autonomy	Goal setting, self-organization of activities, self-monitoring	Level 3 – Self-direction
Leadership and caring for others	Role-taking, peer support, encouragement, mediation	Level 4 – Leadership & Caring
Reflection and self-assessment	Journals, plenary discussions, student self-evaluation	Cross-cutting (across all levels)
Transfer of responsibility	References to application beyond PE and classroom	Level 5 – Transfer (emerging)

4. Discussion

This study aimed to examine the impact of a school-wide TPSR-based intervention on elementary students' personal and social responsibility. The integration of both quantitative (self-report questionnaire) and qualitative (teacher diaries and field notes) methods provided a comprehensive understanding of the changes observed during the intervention. The value of a mixed-methods approach was particularly evident. While the ANOVA results established measurable effects, the qualitative narratives revealed the nuanced dynamics of teacher-student interaction, peer mediation, and emotional development—core aspects of TPSR that may not be fully captured through numerical data alone. As Pozo *et al.* (2018) and Shen *et al.* (2022) have emphasized, this methodological triangulation strengthens both the internal and ecological validity of TPSR-based interventions. This is especially relevant for whole-school TPSR implementations, where outcomes are shaped by contextual factors (e.g., classroom climate, teacher collaboration, and fidelity) that require qualitative elucidation (Camerino *et. al.,* 2019; Gray *et al.,* 2019; Manzano-Sánchez *et al.,* 2020).

Based on the results accumulated through the use of the PSRQ questionnaire, students demonstrated significant improvements in both personal and social responsibility, as indicated by decreased post-intervention scores. These findings matched with the results from similar TPSR programs (e.g., Carbonero *et al.,* 2017; Shen *et al.,* 2022), reinforcing the model's effectiveness in cultivating prosocial behaviours through structured physical and classroom activities. In line with more recent evidence, TPSR-based interventions have also been associated with improvements in prosocial behaviour and classroom climate, and reductions in disruptive or aggressive conduct when implemented with structured reflection and autonomy support (Manzano-Sánchez *et al.,* 2021; Sánchez-Miguel *et al.,* 2025). Such findings also correspond to the widely recognized need to address behavioral problems in schools, especially regarding students who, due to a lack of socially valuable support, are characterized as students "at-risk" (Jung & Wright, 2012). Recent educational research similarly highlights that student voice and agency-oriented pedagogies can strengthen engagement and social outcomes—conditions that are conceptually aligned with TPSR's emphasis on autonomy, responsibility, and respectful participation (Holquist *et al.,* 2023; O'Reilly *et al.*, 2024).

Based on data accumulated both during and after the intervention program, notable changes were recorded in student empathy, leadership, collective goal setting, and self-regulation. These observed outcomes mirror the outcomes identified by Shen *et al.* (2022), especially in regard to improved emotional and interpersonal skills after the implementation of a TPSR intervention. Additionally, the use of co-created classroom conventions, structured group roles (e.g., leaders, mediators), and self-assessment TPSR levels – as these were used in the present study - is also consistent with best practices described by Camerino *et al.* (2019) and Wright and Irwin (2018). These practices also reflect the key instructional features captured by TARE 2.0 (e.g., modeling respect, providing choices, promoting leadership, and explicit discussion of transfer), which are commonly used to strengthen implementation fidelity in responsibility-based programs (Camerino *et al.,* 2019; Escartí *et al.*, 2015).

Student resistance—particularly among older students—and challenges related to time constraints and family engagement were noted, reflecting well-documented implementation barriers in the TPSR literature (Camerino *et al.,* 2019; Wright & Irwin, 2018). Despite these difficulties, many students displayed meaningful progress in self-awareness and responsibility, especially when teachers applied key TPSR strategies with consistency and authenticity. In relevant literature, these strategies are in accordance with core elements of the TPSR process model, such as the creation of a positive learning environment and the promotion of leadership (Filiz, 2019; Li *et al.,* 2025; Manzano-Sánchez, 2023; *Shen et al.,* 2022). The PE teacher's emphasis on democratic decision-making, guided discovery, and peer teaching in the present study also supports the suggestion for the development of student autonomy and competence within educational interventions (Camerino *et al.,* 2029; Deci & Ryan, 2000). Relevant studies show that when students are given choices and autonomy to interact within classroom activities, their behaviors align more with the sustainment of a positive learning environment (Gordon *et al.,* 2016; Manzano-Sánchez *et al.,* 2021; Prat *et al.,* 2019; Valero-Valenzuela *et al.,* 2019). Within this logic, the explicit structuring of roles (leaders/mediators) and shared classroom conventions in the present study likely supported students' autonomy and accountability, which are considered central mechanisms for responsibility development and conflict reduction (Prat *et al.,* 2019; Valero-Valenzuela *et al.,* 2020).

That was mainly one of the reasons that support our claim towards the need of adopting human-centred approaches (Dania & Farias, 2024) in the implementation of pedagogical interventions, something which in the present study was made possible through the use of the participatory action research methodology. The value of participatory action research as a responsive and human-centered approach to educational change has proven to be useful in previous TPSR studies (Beaudoin *et al.*, 2010; Gray *et al.*, 2019). What became evident during the intervention was that research of this kind (i.e., participatory, whole-school approach, multiple methods data collection and analysis) contributes to the growing recognition of the need to design teaching with a focus on the holistic development of students, integrating elements of personal and social development. Importantly, the PAR cycles (planning–action–observation–reflection) appeared to support ongoing instructional adjustment and shared problem-solving, which are frequently noted as facilitators of TPSR sustainability in authentic school settings (Gray *et al.,* 2019; Manzano-Sánchez *et al.,* 2020).

This approach is consistent with the belief that positive attitudes are nurtured through educational interventions that promote the adoption of a socially responsible, active life, which is the ultimate educational goal of PE. It also highlights the important role of teachers in the successful implementation of model-based educational interventions targeting holistic student development. In our study, teacher behaviors linked to fidelity—such as offering choice, modeling respect, and promoting student voice—were repeatedly documented in diaries and observations and are consistent with evidence that teacher autonomy-support and respectful interaction predict improved student outcomes in TPSR programs (Camerino *et al.,* 2019; Prat *et al.,* 2019; Valero-Valenzuela *et al.,* 2020).

Action research interventions in classroom settings have been shown to effectively reduce disruptive behaviors; for instance, strategic changes in classroom seating arrangements led to a significant decrease in disruptive behaviors through direct observation and student interviews (Wangdi & Namgyel, 2022). Moreover, self-management strategies, which are often embedded in action research projects, have been identified as highly effective in improving classroom behavior, with a systematic review confirming their positive impact on student conduct (Smith *et al.,* 2022). Finally, action research programs that emphasize proactive classroom management and positive behavior support have also been linked to reductions in undesirable behaviors and improvements in overall learning climate (Tingstrom *et al.,* 2020). These findings complement the present study by underscoring that reflective, iterative teaching adjustments—central to PAR—can function as mechanisms for improving classroom climate and responsibility outcomes.

Beyond responsibility gains within the school, the whole-school paradigm also supports TPSR's ultimate aim (Level 5: Transfer). While transfer may be less visible in short interventions, emerging evidence suggests that autonomy- and responsibility-oriented TPSR approaches can influence students' daily lives and broader social functioning (Jiménez-Parra *et al.,* 2024; Pozo *et al.,* 2018).

Consistent with prior empirical evidence, our findings also suggest developmental variation across grades. Younger students tended to demonstrate improvements primarily in cooperation and respect, whereas older students showed stronger gains in autonomy, leadership, and conflict management—patterns aligned with previous TPSR research in primary and secondary education (Jiménez-Parra *et al.,* 2024; Sánchez-Alcaraz *et al.,* 2020; Valero-Valenzuela *et al.,* 2019).

Overall, these findings reinforce TPSR as a viable whole-school pedagogical approach that can enhance responsibility, strengthen classroom climate, and support prosocial development, particularly when implemented through collaborative, reflective, and autonomy-supportive teaching practices.

5. Limitations and Future Research

This study affirms the potential of TPSR as a viable and impactful pedagogical model in elementary education. Through carefully designed instructional strategies and an action research framework, the program contributed to meaningful shifts in students' responsibility-related behaviours. The results demonstrate that even young learners can internalize key values such as empathy, cooperation, and accountability when provided with consistent opportunities for reflection, leadership, and autonomy. However, these gains are contingent upon teacher engagement, contextual adaptability, and systemic support. Professional development in TPSR principles, coupled with tools such as PSRQ and structured teacher reflection, may facilitate sustained implementation. Moreover, the role of family–school communication

warrants further investigation, especially regarding the transfer of TPSR values beyond the classroom.

Although this action research provided valuable information about the implementation of the TPSR model in a primary school setting, several limitations must be acknowledged. The study was conducted in a single school with a relatively small sample of teachers and students, which may limit the generalizability and transferability of the findings (Cohen *et al.,* 2017). The specific school culture, team dynamics, and teacher commitment likely influenced the outcomes; therefore, similar interventions in other institutional contexts may yield different results. Relatedly, the absence of a control or comparison group does not allow the observed changes to be attributed exclusively to the TPSR intervention, even though the use of pre–post measures and the triangulation of quantitative and qualitative data strengthen the credibility of the interpretations (Aygün *et al.,* 2024; Pozo *et al.,* 2018).

In addition, the reflective journals, although rich in depth and authenticity, relied on teachers' self-reports and may have been subject to interpretive bias or selective recall (Creswell & Poth, 2018). Similarly, the study partly relied on self-report questionnaire data, which may be influenced by social desirability, especially after an intervention explicitly targeting responsibility and prosocial conduct. At the same time, the lead researcher's dual role as facilitator and participant-observer—although consistent with the principles of action research (Kemmis & McTaggart, 1988)—may have introduced unintentional bias into data collection and interpretation, despite the use of triangulation and collaborative reflection strategies intended to enhance credibility.

A further methodological limitation concerns the potential influence of the Hawthorne effect, namely the possibility that improvements in student behaviour and engagement occurred partly because participants were aware they were being observed and involved in a research process, rather than solely as a direct result of the TPSR strategies. In the context of the present study, the increased enthusiasm and heightened commitment of teachers—particularly during the initial phase of implementation—may have contributed to more positive student attitudes and behavioural improvements independently of the intervention content. This concern is widely discussed in educational innovation and action research contexts, where increased attention, feedback, and close monitoring can act as confounding influences that make it difficult to separate "intervention effects" from "research-condition effects" (McCambridge *et al.,* 2014; McCambridge *et al.,* 2015; Sedgwick & Greenwood, 2015). In addition, classroom dynamics can fluctuate considerably across time and groups; thus, variation in peer relationships, cohort characteristics, and teacher–student interactions may have shaped both implementation intensity and observable outcomes.

Another limitation relates to the limited representation of student voice. While some behavioural outcomes were inferred through teacher observations, direct data from students—such as interviews, focus groups, or systematic self-reflective narratives—were not consistently collected. This may have restricted the depth of understanding regarding students' subjective experiences, their internalization of responsibility, and their perceptions of pedagogical change (Ladson-Billings, 2014). Likewise, the limited inclusion of parents' perspectives reduces the study's capacity to examine responsibility transfer and family–school synergy as a mechanism for sustaining TPSR outcomes beyond the classroom setting.

Future research could address these limitations by extending the intervention to multiple schools, classrooms, and sociocultural contexts to enhance transferability. Where feasible, the inclusion of comparison groups and/or quasi-experimental designs would strengthen causal claims, while still allowing for ecological implementation. Longitudinal designs would also allow examination of the enduring impact of TPSR-based practices on student development, behavioural autonomy, peer relationships, and transfer over time (Hellison, 2010). Incorporating more diverse qualitative data sources—particularly from students and parents—could provide a more holistic view of intervention impact and inform the design of culturally sensitive and developmentally appropriate practices. Finally, future studies should further examine the systemic conditions that enable or constrain responsibility-based education, including school-level policies, administrative support, teacher professional development models, and family engagement pathways, as well as the mechanisms through which implementation fidelity is sustained across educators and grade levels.

6. Conclusion

This study examined the implementation of Hellison's Teaching Personal and Social Responsibility (TPSR) model as a whole-school pedagogical framework through a mixed-methods participatory action research design in primary education. The findings indicate that when TPSR is systematically embedded across physical education and classroom practices, it can enhance

students' personal and social responsibility while contributing to a more positive and coherent school climate.

The whole-school approach emerged as a key factor in the effectiveness of the intervention. Shared responsibility goals, a common pedagogical language, and consistent practices across subjects enabled students to experience continuity in expectations and values. As a result, students demonstrated improvements in respect, effort, self-direction, cooperation, and emerging leadership, with early indications of responsibility transfer beyond individual lessons. These findings suggest that TPSR is most effective when adopted as a collective educational framework rather than as an isolated instructional approach.

Participatory action research played a complementary and critical role in supporting sustainable implementation. The iterative cycles of planning, action, observation, and reflection facilitated teacher collaboration, ongoing professional learning, and context-sensitive instructional adjustments. Through shared reflection and inquiry, educators developed greater confidence in addressing undesirable behaviors and fostering responsibility-oriented learning environments.

Importantly, the study highlights the central role of teachers in the success of responsibility-based education. For TPSR to be implemented meaningfully and sustained over time, educators need opportunities to become familiar with the model and engage in reflective professional development. Overall, combining a whole-school TPSR framework with participatory action research offers a robust, human-centered approach that supports both student responsibility development and teacher professional growth in primary school settings.

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Ethics Approval Statement

This study was conducted following the Declaration of Helsinki and was approved by the Institutional Review Board of the School of Physical Education and Sport Science at the National & Kapodistrian University of Athens, Greece (protocol number 1531/17-05-2023).

Participant Consent

A written parental consent was secured for student participation. All participants were assured anonymity and confidentiality.

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Yes

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