

## AN EVALUATION OF A PHYSICAL EDUCATION PROGRAM FOR THE DEVELOPMENT OF STUDENTS' RESPONSIBILITY

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**Abstract:** The aim of this study was to evaluate the effectiveness of a physical education program aiming at developing personal and social responsibility. Forty-one 5th-grade students participated in this study (10 boys and 11 girls assigned to an experimental group and 12 boys and 8 girls to a control group). The program was devised based on the "Teaching Personal and Social Responsibility" and the "Sport Education" models. After the implementation of the program students responded to questionnaires regarding their personal and social responsibility, as well as their knowledge about responsibility. Additionally, interviews were collected from experimental group students. Analysis of quantitative measures did not reveal significant differences between groups in self-ratings and knowledge of responsibility. On the contrary, the qualitative results showed that students developed more articulated perceptions of responsibility.

**Key words:** Personal responsibility, Physical education, Social responsibility.

### INTRODUCTION

Is there any teacher or parent who has never complained about students' irresponsibility? Responsibility is viewed both as a personal characteristic necessary for success in school and as a quality to be achieved through schooling (Lickona, 1992). Two facets of responsibility are recognized: personal and social. The latter «includes taking care of self and others, fulfilling our obligations, contributing to our communities, alleviating suffering, and building a better world» (Lickona, 1992, p. 68, lines 1-3). Personal responsibility, on the other hand, is defined as «...a duty to deal with or take care of somebody or something, so that you may be blamed if something

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goes wrong» (Hornby & Wehmeir, 2005, p. 1294). Education for social responsibility aims at sensitizing students to other people's rights, feelings and needs, while education for personal responsibility is associated with personal improvement and development.

Physical education and sport are particularly suitable for teaching students social-emotional skills for several reasons including that there are frequent teacher-student and student-student interactions in group activities and that there is a resemblance between performance excellence in sport and personal excellence in life. Furthermore, there is an apparent similarity between the mental skills needed for successful performance in sport and in non-sport domains (Danish, Forneris, & Wallace, 2005). In the last two decades two physical education models related to responsibility have been developed: Hellison's (1985) "Teaching Personal and Social Responsibility (TPSR)" model and Siedentop's (1994, 2002) "Sport Education (SE)" model. Both models have been established within the sport pedagogy field.

In the context of physical education, according to Hellison (1985), a responsible person is one who is willing to learn new things, can work on his/her own, and creates and executes personal programs to improve his/her condition. The TPSR model postulates five levels of behavior with respect to responsibility: irresponsibility, respect, participation, self-direction, and caring. Each level is presented as a goal to be achieved and several strategies are suggested towards this aim. Examples of these strategies are self-awareness talks, modeling, reinforcement, group discussion, peer instruction, problem solving, and reflection time. Most applications of the TPSR model have been used with students at risk (see Hellison & Walsh, 2002, for a review). DeBusk and Hellison (1989) reported that the program had positive cognitive, emotional and behavioral effects on students. Martinek, Schilling, and Johnson (2001) applied the TPSR model to 16 underserved elementary youngsters in a school mentoring program and reported that by the end of the intervention, students were putting effort to learning tasks in the classroom, but they faced difficulties transferring some of the other values to the classroom. Critics of the TPSR model point out that the program was specifically designed and, therefore, is better suited for students at risk and underserved youth. Recently, however, the program has been applied and tested in mainstream physical education. Cecchini, Montero, Alonso, Izquierdo, and Contreras (2007) reported that students who received the program showed an improvement in indicators of personal and social responsibility, and a decrease in rough play, drive to win and poor sportsmanship. Additionally, Wright and Burton (2008) found that the TPSR model positively influenced student behavior during the program. However, these authors noticed problems with students' motivation and engagement.

The SE model is a physical education curriculum and instruction model designed to provide authentic, educationally rich sport experiences for students. The main features of the model are: (a) students participate in sport seasons that are longer than typical physical education units; (b) students become members of teams and this affiliation allows students to plan, practice and complete together, as well as benefit from all the social development opportunities that follow membership in a persisting group; (c) a schedule of competition is organized at the outset, which allows learners to practice and play within a predictable schedule of fair competition; (d) a culminating event marks the end of the season and provides both the occasion to mark progress and the opportunity to celebrate successes; (e) the entire season is festive with continuous efforts made to celebrate success (Siedentop, 2002). Although development of responsibility is not the main focus of the SE model, students in the program based on this model take much of the responsibility for the instruction, organization and management of the sporting experience.

Research on the SE model showed positive reactions by the students (Grant, 1992), increased levels of active participation (Hastie, 1996), and increased physical activity levels (Hastie & Trost, 2002). Hastie (1998) examined the perceptions of 6th-grade girls who participated in a 20-lesson season of floor hockey that followed the SE model. Girls commented that they enjoyed playing in mixed-sex teams and taking increasing responsibility for the unit, even though some of the boys tended to dominate decisions and power roles, such as captain and referee. However, Brock (2002) indicated that students' experiences and social interactions during a SE unit were strongly affected by student status. Pill (2008) showed that the SE model has the potential for the development of an enhanced motivational climate and the facilitation of a broader range of curricular outcomes. Pill (2008), however, also reported that the SE model may lead to an intensification of the teachers' work. Recent studies have also warned that participants in programs based on the SE model failed to learn higher-order skills during peer teaching (Wallhead & O' Sullivan, 2007) and that the SE model may not enhance achievement or participation for all students (Sinelnikov & Hastie, 2008).

The two aforementioned models have several goals in common. Both aim to develop personal and social responsibility, self-respect and respect to others. They also aim to increase motivation for participation, socialization and team play, as well as to decrease possibilities of misbehavior. Moreover, both models promote autonomy, encourage students to set personal goals and to act independently.

On the other hand, a comparison of the two models reveals some differences. In SE, responsibilities are presented to students as clear behavioral expectations, and rewards and recognitions for appropriate behaviors are judiciously applied. In the

TPSR model responsible behaviors are presented and coded in levels and goals but the emphasis is on discussion, negotiation, reflection, and self-direction. Despite these differences, a combination of strategies from both models may be useful for a physical education program aiming at developing personal and social responsibility.

Hastie and Buchanan (2000) combined the two models, noticing that the characteristics of the TPSR model amplify the application of the SE model. The combination of the two models resulted in a "hybrid model" (Empowering Sport), with three goals, namely sport skill competence, social responsibility, and personal empowerment. The main objective of the model was according to the authors «...personal empowerment, particularly through making appropriate personal and social responses» (p. 34). Qualitative evaluation of the model showed that, regarding SE, students improved their game performance and their understanding of game tactics, while as regards the TPSR model, students improved their responsible behaviors and exhibited awareness of the goals of the TPSR model.

As the Hastie and Buchanan's (2000) study is, to our knowledge, the only one to test a combination of the two models, more evidence is required regarding the promising potential of physical education programs matching elements of the SE and TPSR models. The combination of the two models has an apparent appeal for physical educators because the time allocated to physical education is limited and there are several excellent curricular models they may wish to apply. However, the effects of such combinations ought to be empirically tested. Therefore, the aim of the present study was to evaluate the short-term effectiveness of a physical education program that combined elements from the TPSR and SE models, and aimed to develop personal and social responsibility. A secondary aim was to identify elements of the program that may have to be modified in future applications.

### *The present study*

The physical education program developed for the present study had a conceptual similarity with that of Hastie and Buchanan (2000) in that it combined elements from the SE and TPSR models, however, it had also a number of differences. First, Hastie and Buchanan (2000) employed a modification of Australian football as the content of the program whereas in the present study floor hockey was employed. Second, in the Hastie and Buchanan program, students were more involved in the modification of the game and ending up with a novel game, whereas in the present study students contributed only the development of rules for the mini-game of hockey. Third, in the present study there was greater emphasis on behavioral goals regarding the responsibility aspects of the TPSR model. Finally, the Hastie and Buchanan's

program consisted of 26 sessions whereas the program of the present study consisted of 16 sessions.

Hastic and Buchanan (2000) relied solely on qualitative evaluation without using a control group whereas in the present study both qualitative and quantitative evaluation methods were employed. Quantitative measures involved students' perceptions of their own responsible behavior and knowledge regarding responsible behavior while interviews focused on students' opinions about the program and its effects. It was hypothesized that students of the experimental group, relative to those of the control group would (a) enhance their self-reported use of responsible behaviors (Hypothesis 1) and (b) enhance their knowledge regarding responsible behaviors (Hypothesis 2). Regarding the interviews, it was expected that experimental group students would have articulated perceptions of the concept of responsibility and would be able to identify elements of the program that contributed to the promotion of responsibility.

## **METHOD**

### ***Design***

The program consisted of 16 sessions and students attended the program for one hour every week. It regarded the floor hockey game. Floor hockey was chosen because it was a totally unknown sport to students as it is not included in the national curriculum and it is not a common sport in Greece. None of the students had any previous experience in floor hockey. It was assumed that this could result in an initial high interest in the program's content and at the same time it could ensure equal skill level for all students.

During the program period, students also participated in typical physical education for an additional two hours per week. Students of both groups completed a knowledge test immediately before and after the program and a self-report inventory immediately after the program. At the end of the program interviews were collected from the students of the experimental group.

### ***Participants***

Participants in the study were 41 5th-grade students (22 boys and 19 girls), of one elementary school in a lower to middle socioeconomic status area of Thessaloniki, Greece. Students were randomly assigned to an experimental group (10 boys and 11 girls) and to a control group (12 boys and 8 girls). All the participants were Greek in origin.

### ***Procedure***

School principals, parents, and students provided permission for this study by completing respective consent forms. The first author who taught both the experimental and the control group is a physical educator with master degree and at the time of the study had 10 years of teaching experience. In order to familiarize with the students, she had a two-month prior contact with them attending physical education classes. According to Siedentop (2002) the application of an introduction period before the model's application increases the possibilities of success of the program.

### ***Description of the program***

An overview of the program is presented in Table 1. The development of the program was based on the TPSR and SE models. Students of the experimental group were informed that the program's main purpose was to develop personal and social responsibility through practicing a new sport. The specific goals for these students were to: (a) develop hockey skills; (b) understand and apply hockey rules and tactic; (c) participate in games and organize matches; (d) cooperate with classmates for common goals; (e) develop the ability to make the right decisions in issues that arise during the games; and (f) learn how to exhibit responsibility.

Modifications to the original game of floor hockey were made regarding: (a) the size of the playing field; (b) adequate athletic equipment; (c) duration of the game; (d) rules (initially basic and simplified rules and progressively more rules closer to the official ones); and (e) number of the team players. In the first seven sessions students were taught basic floor hockey skills. In the next seven sessions students played in teams short modified games while learning attack and defense roles as well as tactical skills. In the last two sessions a tournament was organized.

***Experimental group's program.*** Students of the experimental group worked in three small teams. The teams were formulated by the students. During the first seven sessions the teams swapped the role of "teachers" and "students". In the next sessions the three teams swapped the roles of "players" and "coach, referees, and secretariat". Roles were swapped within teams too (offender, defender, center player, and goalkeeper). The teaching style was student-centered, and students made the decisions about team composition, rolling of roles and duties in the team. In every session the introduction was devoted to briefing and discussion regarding the content and the goals of the session, organization of practice, roles and duties, demonstration of skills by means of photos or video and explanation of new rules and the sessions'

Table 1. Description of the program

Responsibility related elements	Hockey related elements	Session outline
Presentation of the responsibility levels – goals	Game presentation	Session 1 Introduction to hockey (video)
Commitment contract for students' and teacher's rights and duties	Introduction to hockey Purpose of the game	Session 2 Presentation of example behaviors of responsibility levels Goals of the program Forming teams Closure discussion: Signing the commitment contract
Review of rights and duties	Hockey basic rules Drawing the field	Session 3 Introductory discussion: Review of responsibility levels Number and positions of team players Hockey equipment Field lines and their use in game Closure discussion: Matching behaviors with levels
Role taking (athlete-coach) Exhibit personal responsibility behaviors (self-control)	Safe use of stick Grip stick Dribbling	Session 4 Introductory discussion: Behavioral goals for self-control Dribbling using hockey stick, peer instruction using reciprocal teaching cards. Closure discussion: Review of exhibited behaviors and modification of behaviors
Role taking (athlete-coach). Exhibit prior personal responsibility behaviors (plus effort and participation)	Control, dribbling and passing	Session 5 Introductory discussion: Behavioral goals for effort and participation Peer instruction with reciprocal teaching cards Closure discussion: Review of exhibited behaviors and modification of behaviors
Role taking (athlete-coach). Exhibit prior personal and social responsibility behaviors (+ cooperation and respect others' rights and feelings)	Control, dribbling and passing the ball while moving in the field	Session 6 Introductory discussion: Behavioral goals for effective cooperation and respect others' rights and feelings Practice in groups of three, that is, two practicing and one checking (coach) then swap roles Closure discussion: Review of exhibited behaviors and modification of behaviors

(Table continues)

Table 1. Description of the program (continue)

Role taking (athlete-coach-referee). Exhibit prior personal and social responsibility behaviors (+ decision making)	Passing and shooting	Session 7	Introductory discussion: Modification of mini game rules – behavioral goals for developing ability to make the right decisions in issues that arise during the games. Students form three teams with seven members each (two offense, two defence, one goalkeeper, one coach, one referee) Teams swap roles. Closure discussion: Review of exhibited behaviors.
Role taking (athlete-coach-referee-secretariat). Exhibit prior personal and social responsibility behaviors (+ accept differences)	Play modified game Offense –defence: Basics	Session 8	Introductory discussion: Modification of mini game rules – behavioral goals for developing ability to accept individual differences. Two teams practicing (three offense, three defense, one center), one team supporting (two coaches, two referees and two secretariats). Teams swap roles - Record keeping Closure discussion: Review of exhibited behaviors and modification of behaviors – modification of game rules
Role taking (athlete-coach-referee-secretariat). Exhibit prior personal and social responsibility behaviors	Play game with modifications Players move only on well-defined field area	Session 9	Introductory discussion: Modification of game rules – behavioral goals for developing ability to make the right decisions in issues that arise during the games and to accept individual differences Normal size of the playing field Three teams - Teams swap roles - Record keeping Closure discussion: Review of exhibited behaviors and modification of behaviors – modification of game rules
Role taking (athlete-coach-referee-secretariat). Exhibit prior personal and social responsibility behaviors	Play game with modifications Players move only on well-defined field area (center only, offense only, defense only). Free moving: Players turn out of positions	Session 10	Introductory discussion: Modification of game rules – behavioral goals for developing ability to make the right decisions in issues that arise during the games and to accept individual differences Normal size of the playing field Three teams Teams swap roles Record keeping Closure discussion: Review of exhibited behaviors and modification of behaviors – finalize the game rules

(Table continues)



Table 1. Description of the program (continue)

Role taking (athlete-coach-referee-secretariat) Exhibit prior personal and social responsibility behaviors (+ cooperation)	Short corner Offense-defense tactics Play game	Session 11	
		Introductory discussion: Review of the final game rules – behavioral goals for cooperation to common goal	Playing games with emphasis on corner and offense - defense tactics – Closure discussion: Review of exhibited behaviors and finalize the desired behaviors
		Penalty corner Offense-defense tactics Play game	
Role taking (athlete-coach-referee-secretariat) Exhibit prior personal and social responsibility behaviors	Play game Team practice	Session 12	
		Introductory discussion: Review of the final game rules – review of the final desired behaviors	Playing games with practice on corners and offense – defense tactics. Closure discussion: Deviations from the desired behaviors. Teams finalize their offense – defense tactics.
		Play game Team practice	
Role taking (athlete-coach-referee-secretariat) Exhibit all prior personal and social responsibility behaviors	Play game Team practice	Session 13	
		Introductory discussion: Review of the final game rules – review of the final desired behaviors.	Team practice. Closure discussion: Deviations from the desired behaviors
		Play game Team practice	
Role taking (athlete-coach-referee-secretariat) Exhibit all prior personal and social responsibility behaviors (+ developing organizing skills)	Organize the mini tournament Practice of the teams	Session 14	
		Introductory discussion: Cooperation for preparing the tournament.	Team practice. Closure discussion: Deviations from the desired behaviors
		Practice of the teams	
Role taking (athlete-coach-referee-secretariat) Exhibit all prior personal and social responsibility behaviors	Trial games	Session 15	
		Students play trial games in teams	Record keeping Preparation of the final event
		Practice of the teams	
Role taking (athlete-coach-referee-secretariat) Exhibit all prior personal and social responsibility behaviors	Final game	Session 16	
		Final game	Record keeping
		Record keeping	

behavioral goal. Then practice followed on the playing field. The last three to five minutes (closure) were again devoted to a brief discussion, and students decided whether new behavioral rules would be added in order to avoid injustices or misbehaviors that emerged in that lesson.

Behavioral goals for the students were formulated based on the levels of Hellison's (1985) model. To be more attractive to students these goals were described as attributes of athletes, coaches and referees participating at different levels of competition. Thus, the first and second level of Hellison's (1985) model corresponded to an amateur level, the third level of Hellison's model corresponded to a local level, the fourth level of Hellison's model corresponded to a national level, and the fifth level of Hellison's model corresponded to an international/Olympic games level. Copies of behavioral goals were distributed to the students, were posted on a bulletin board in the classroom which was devoted to hockey and were explained and discussed during the first session. After each session, students returned to the classroom where they had to consult the behavioral goals and reflect upon them in reference to the lesson. Records were kept in every session, and were posted on the board. Other information was also posted such as basic hockey rules and photos demonstrating the skills and tactics, changes in rules, behavioral goals, and the tournament program.

The role of the physical education teacher in the experimental group was to transfer progressively responsibilities to the students. She taught the duties of each role, introduced the basic hockey skills and the basic tactic skills, and then students practiced in small groups under her supervision. She also decided when to proceed to the next step of the hockey skill, because she wanted to be sure that the students were capable of participating well and able to understand and apply the game strategies. If a student did not want to continue, then the teacher had a brief discussion with him or her trying to resolve the problem. All the students generally progressed in the skills taught as these were simple basic skills of a new sport. During the discussions at the entry or at the closure of each session, the physical education teacher interfered only if she had to remind the students that their decisions had to be based on all students' will. If a student disagreed, this was a chance for elaborating on responsibility-related issues. This was considered necessary in order to avoid the influence of high status students who usually dominate, as Brock (2002) has mentioned.

***Control group's program.*** During the first six sessions, basic skills and rules of floor hockey game were taught, with the physical education teacher making all the decisions and having responsibility for teaching ("command style"; Mosston & Ashworth, 2002). For the rest of the sessions students were allocated to three groups by the physical education teacher. Criteria for selection were the equal number of

students in all teams with similar skill level and students' social status in the classroom. The content of the sessions was similar with that of the experimental group but the sessions were teacher-directed.

### **Measures**

**Knowledge of Responsible Behaviors test.** Before and after the program, students of both the experimental and control groups answered a true or false 12-item test, with seven items describing responsible behaviors and five items describing irresponsible behaviors. Example items of responsible behaviors are "keep promises" and "say to others to take care and respect the gym and athletic equipment". Example items of irresponsible behaviors are "help a classmate only if s/he is a friend" and "help only those who have helped him/her". Students were asked to distinguish if the sentence was describing a responsible or an irresponsible behavior. Scores ranged from 0 to 12 with high scores denoting high ability of distinction between responsible and irresponsible behaviors. The difficulty index for these items ranged from .74 to .96 and the discrimination index ranged from .63 to .89.

**Retrospective measure of personal and social responsibility.** Based on the assumption that students' understanding of their level of functioning on responsibility would have been increased after their participation in the program, a retrospective measure of responsibility was also used. The retrospective measure, based on the Personal and Social Responsibility subscales (four items each) of the Social and Personal Responsibility Scale (Conrad & Hedin, 1981) was developed in order to record the referential changes in personal and social responsibility of participants, and it was based on the "then - post ratings" method of Howard (1982). Howard (1982) has provided evidence that, regarding the evaluation of various psychological treatment and training interventions, the use of pre-post design with self-reports is susceptible to a "response-shift bias". He defined a response shift as «...a treatment produced change in a subject's awareness or understanding of the variable being measured» (Howard, 1982, p. 320). To provide an example, a student may feel at pretest that he is "average" in responsibility. A subsequent intervention changes his or her understanding of the behaviors related to responsibility and during the intervention he or she realizes that his or her level of responsibility was below average at pretest. If he or she improved his/her level of responsibility due to the intervention from "below average" to "average" then his or her pre- and post-ratings of responsibility would be average, and thus, his or her improvement would not be evident in the ratings due to the response shift. In a pilot study, these eight items were given to 194 students (44 fourth-grade, 56 fifth grade, and 94 sixth-grade students) and the data were subjected to confirmatory

factor analysis. Results showed a good fit of a two-factor model,  $\chi^2(18, N = 194) = 25.49$ , CFI = .976, RMR = .039, RMSEA = .053.

Thus, eight sets of two items were developed and were answered by the students once after the completion of the program. The four sets corresponded to the four items of the Personal Responsibility subscale and the other four sets corresponded to the items of the Social Responsibility subscale (Conrad & Hedin, 1981). The first item of each set referred to the present (now – denoting the time after the completion of the program) and the second referred to the past (before – denoting the time before the implementation of the program). An example of a two-item set is: “Now I feel responsible for the duties that I assume” and “Before attending the hockey lessons, I felt responsible for the duties that I assumed”. Thus, students of both the experimental and control groups answered the same question twice. The first time they answered for the present (how s/he feels or acts now, after receiving the program), and the second time they answered for the past (how s/he felt or acted before receiving the program). Each item was answered on a 7-point Likert-type response scale, ranging from 1 (never) to 7 (always). Four scores were calculated as a mean of four items each: “Personal responsibility after the program” (Cronbach’s alpha = .80), “Social responsibility after the program” (Cronbach’s alpha = .68), “Personal responsibility before the program” (Cronbach’s alpha = .77) and “Social responsibility before the program” (Cronbach’s alpha = .73).

**Social Desirability Scale.** Participants also completed the short version of the Crowne and Marlowe (1960) Social Desirability Scale (Cronbach’s alpha = .79), because the retrospective measure of personal and social responsibility was considered susceptible to positively biased responses. Correlations between the retrospective measure of personal and social responsibility and the social desirability score were nonsignificant, for “Responsibility now”,  $r = .24, ns$ , and for “Responsibility before”,  $r = .27, ns$ .

**Interviews.** After the end of the program, 14 students (eight females) of the experimental group were randomly selected and were interviewed by the first author. Interviews aimed to raise the meaning of the participants’ actions and at the same time to explain the meaning of self-reported changes in actions and behaviors (Rossman & Rallis, 1998). The interview questions did not refer directly to responsibility because students’ answers to such questions, in a face-to-face contact, might reflect social desirability. Nineteen questions, followed by respective probing, were used. They referred to (a) students’ opinion about the program, (b) distribution of roles, duties, and team membership, (c) comparisons between the intervention program and the typical physical education and comparisons of themselves before and after attending the program, and (d) possible transfer of responsible behaviors to class and home.

### *Qualitative data analysis*

All the interviews were transcribed verbatim. Thematic analysis (Boyatzis, 1998) was used to analyze the transcribed interviews. The two authors read the transcriptions and identified raw data themes, grouped them in lower-order themes, then to higher-order themes and then to general dimensions. To enhance the reliability of themes and coding, a third researcher, familiar with qualitative research, commented on this procedure. Corrections were made in order the two coding researchers and the external researcher to reach an agreement. Analysis was "ongoing" (Rossman & Rallis, 1998) in that the two coders-researchers, made notes concerning the raw data in three sessions-meetings during data collection. Peer debriefing sessions were conducted in order to examine methodological procedures and interpretations of data coding (Patton, 1990). Data driven themes were constructed inductively by the raw information. The inductive approach is searching for patterns that are based on the information being studied (Boyatzis, 1998). During the categorization of the lower-order themes, in case of disagreement, the two authors discussed the issue to reach a consensus.

To attain trustworthiness (Lincoln & Guba, 1985), the following methods were used: (a) prolonged engagement of the researcher which was achieved by the first author who was involved in teaching the participants for two months before the intervention program; (b) member checking that was carried out during and after the interviews; (c) keeping records of such personal thoughts and notes on students' behavior which comprised a reflexive journal; and (d) triangulation of sources which was used in order to strengthen the study's reliability (Patton, 1990). Sources of triangulation were the interviews, the questionnaire and the notes from the reflexive journal.

## **RESULTS**

### *Quantitative results*

Means and standard deviations of the retrospective measure of personal and social responsibility and knowledge for both groups, before and after the program appear in Table 2. A 2(group) x 2(time) MANOVA with repeated measures on the second factor and personal and social responsibility as dependent variables was conducted. A nonsignificant Group x Time interaction was found, Pillai's trace = .076,  $F(2, 38) = 1.57, p > .05$ . The main effects of Group and of Time were not significant, Pillai's trace = .014,  $F(2, 38) = .27, p > .05$ , and Pillai's trace = .127,  $F(2, 38) = 2.78, p > .05$ ,

respectively. Furthermore, a 2(group) x 2(time) ANOVA with repeated measures on the second factor and the knowledge score as dependent variable showed a nonsignificant Group x Time interaction,  $F(1, 37) = 1.86, p > .05$ . The main effect of Group was not significant,  $F(1, 37) = .075, p > .05$ , while the main effect of Time was significant,  $F(1, 37) = 6.48, p < .05$ , partial  $\eta^2 = .15$ .

Table 2. Descriptive statistics

	Experimental group				Control group			
	Before the program		After the program		Before the program		After the program	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Personal responsibility	5.30	1.42	6.22	.76	5.70	1.15	5.82	1.35
Social responsibility	5.70	1.16	6.24	1.02	5.77	1.28	5.89	1.35
Knowledge	7.94	2.12	10.26	2.79	8.90	2.82	9.60	2.09

### Interviews

Table 3 presents the dimensions that have emerged – namely, general comments, transfer, comparisons, perceptions about the new strategies, and environmental responsibility – as well as the higher- and lower-order themes for every dimension and the frequency of appearance of each theme in the students' answers. All themes were considered equally important regardless of their frequency. Examples for each theme are also presented in Table 3.

**General comments.** Answers were coded around two higher-order themes, namely the positive and negative comments. The positive comments were coded in the following lower-order themes, that is, enjoyment, pleasure, interest, importance – effort, responsibility, new game, cooperation/team play, and learning. The negative comments consisted of the lower-order themes, that is, difficulty, long duration, cooperation problems, and unfairness.

**Transfer.** Answers in this dimension were coded around two main higher-order themes, namely the transfer of responsibility to classroom and home. In each higher-order theme there were two lower-order themes, one with comments that imply transfer and another one with comments that imply non-transfer.

**Comparisons.** Two higher-order themes emerged, namely (a) comparison between the program and typical physical education and (b) students' comments about themselves before and after attending the program.

The first-order theme "Comparison with typical physical education" was coded in the following lower-order themes, that is, way of learning, autonomy, cooperation, responsibility, enjoyment, content, interest, and no differences.

Table 3. Coding framework

High-order themes	Low-order themes	Example answer per theme
Positive comments	Enjoyment (9)	General comments dimension
	Pleasure (3)	«Lessons were very good, I enjoyed them.»
	Interest (3)	«We learn and we have fun at the same time.»
	Importance – effort (2)	«It was interesting.»
	Responsibility (1)	«...this lesson was very important to me.»
	New game (3)	«...our purpose was to be more responsible to all those things that we undertook.»
	Cooperation – team play (2)	«It was something new and unusual, not like the usual sports we play like basketball, football...»
	Learning (4)	«... we practiced in teams, so we made new friends.»
	Difficulty (2)	«We learn new things...about hockey.»
	Long duration (1)	«...it was much more difficult.»
Negative comments	Cooperation problems (2)	«...it (hockey) would be boring all year long.»
	Unfairness (1)	«...sometimes we argued in our teams...»
		«...the secretary was unfair when she checked the mistakes we made.»
		Transfer
		«...now, I pay more attention in class.»
To class	Non transfer (2)	«Nothing changed.»
	Transfer (7)	«Now I tidy my room almost every day.»
	Non transfer (7)	«In general at home I don't take so much responsibility as in these physical education lessons.»
		Comparisons
with typical physical education	Way of learning (9)	«...she (the teacher who implemented the hockey program) explained everything to us ...we had to learn the rules well...she (the physical education teacher) told us just to play and many arguments came along.»
	Autonomy (1)	«...In physical education class we just go in and play, while in hockey lessons we try new roles and we have many alternatives.»
before and after the program	Cooperation (7)	«...many of my classmates use to argue in physical education class, but not in hockey lessons.»
	Responsibility (1)	«...I mean that if I was not attending these lessons, I would be less responsible.»
	Enjoyment (3)	«...it is different, it is more fun.»
	Content (5)	«...in physical education lessons we do the same sports all the time.»
	Interest (1)	« ...It would be more interesting if the physical education lessons were like hockey lessons.»
	No differences (4)	«No,...I see no differences, they are the same.»
	Autonomy (1)	«...she doesn't force us to do things, we like what we do, its very nice and we try to learn the sport we choose to play.»

(Table continues)

Table 3. Coding framework (continue)

Respect for athletic equipment (2)	«...she teaches us to respect the athletic equipment.»
Knowledge (2)	«... we have learned more.»
Classroom atmosphere (1)	«...she showed to us what to do without shouting...no one had to complain about something...this way we changed our manners...»
Self-improvement (1)	«I think that day to day we manage to improve our selves...»
Empathy (1)	« - Do you understand what a referee has to do?» «Yes, he has to be fair all the time.»
Responsibility (6)	« Can you forgive his mistakes now?» «Yes, now I can.»
Familiarity (1)	«...now I feel more responsible, I am more familiar with duties, and everything I have to do I just do it in time.»
	«...I know that everything we do involves some duties.»
	Perceptions about new strategies
Cooperation (2)	«...the most important is to cooperate with all team members, not only with friends.»
Justice (5)	«...no one felt he had been treated unfairly.»
Commonwealth (2)	«...because there were many other students that they wanted to take this role.»
Participation (1)	«...we all participate, for example when you start playing as a referee, then you will be a player...»
Responsibility (1)	«...we swap roles and we took all of the responsibilities...»
Learning new roles (4)	«...it is much better to play in all positions to learn them...this way we learn better all the roles.»
Interest (1)	«...if a student did not take a role at all he might have thought that we are not interested in him.»
Better understanding of others (1)	«...when you take the other's role, then you can understand him better.»
Annoyance (5)	«...I was annoyed when a classmate took the role I wanted more.»
Unfamiliarity (1)	«...if he doesn't give the right instructions and make mistakes?»
Obligation (1)	«...because that is the right think to do.»
Avoiding consequences (6)	«...because it will spoil the game.»
Self-improvement (1)	«...to be better in what we do.»
Personal improvement (1)	«...I want to be good in hockey, because maybe if grow up I will be a real hockey player.»
Good play (8)	«Because... the whole game will be spoiled.»
Knowledge (1)	«This way everyone could learn the other's duties.»
Positive feelings (2)	«...it's for us ...because we know we did something good.»
Justice (4)	«...to avoid injustice.»
Cooperation (1)	«I pass to all teammates.» « To all or to all the good ones?» «To all.» «What if they lose the ball?» «It doesn't matter.»
Obligation (4)	« ... because we are obligated to do everything we have to do.»
Duties	

(Table continues)



Table 3. Coding framework (continue)

Avoiding punishment (2)	«... because if I will not do my duties my teacher will punish me.»
Winning (1)	«... because if I was a player and didn't play well (as my duty is as a player), the other team will win.»
Responsibility (4)	«... -With responsibility. -For example, when I was a secretary in the game, I recorded everything I saw, because it would be unfair if I didn't...»
Good impression to others (2)	«...to make good impression to physical education teacher.»
Avoiding bad feelings (2)	«... because I would feel uncomfortable, if I didn't.»
Knowledge (1)	«...so everyone will learn the game.»
New friends (2)	«...to make new friends.»
Cooperation with all (5)	«...to cooperate with classmates that we didn't like, and they were not our friends. Now we do not distinguish between these kids.»
Respect for athletic equipment	Environmental responsibility Respect for athletic equipment (1) «... we do not want to destroy the sticks, we like to play hockey and if we destroy them then we will not have sticks to play.»
Stress	Stress «I am trying not to harm myself, that's why I like to play defense. I do not like to play offence because it is more active and aggressive and you might hurt yourself.» «This means that you feel bad when you play in offence?» «Yes, I am afraid.»

Note: The number in parenthesis denotes the number of answers per theme.

The "Before and after" theme was coded in the following lower-order theme, that is, autonomy, respect for the athletic equipment, knowledge, classroom atmosphere, self-improvement, empathy, responsibility, and familiarity.

**Perceptions about the new strategies.** Answers were coded around three higher-order themes, namely roles, duties, and team membership.

Students' answers to "roles" were coded in the following lower-order themes, that is, cooperation, justice, commonwealth, participation, responsibility, learning new roles, interest, better understanding of others, obligation, avoiding consequences, self-improvement, annoyance, and unfamiliarity.

Students' answers to "duties" were coded in the following lower-order themes: personal improvement, good play, knowledge, positive feelings, justice, cooperation, obligation, avoiding punishment, winning, responsibility, good impression and avoiding bad feelings.

Finally, students' answers to "team membership" were coded in the following lower-order themes: knowledge, new friends, and cooperation with all.

**Environmental responsibility.** Answers that referred to environmental responsibility were coded around one theme, namely respect to athletic equipment.

**Stress.** This dimension emerged as a separate theme and it was agreed not to be included in any of the other dimensions. Although it was detected in the interviews of only two students, it was deemed that it had to be presented to the results as a separate theme. One of the comments was: "...I do not like to play as an offensive player because it is a more active and aggressive position and I might hurt myself".

## DISCUSSION

The aim of the present study was to evaluate the effectiveness of a physical education program aiming to develop personal and social responsibility. Both quantitative and qualitative methods were employed, yet these provided different results. Regarding the quantitative evaluation both Hypothesis 1 and Hypothesis 2 were falsified as the retrospective measure of responsibility and the knowledge test did not show significant differences between the experimental and the control group after the program. However, students of the experimental group tended to increase their scores in both the retrospective personal and social responsibility measures. This nonsignificant finding may be attributed to the small sample size or to the self-report measures used which may have been susceptible to a self-enhancement bias. Also, the wording of the items was probably too general and the items too few to capture the meaning students give to responsibility. These are limitations of the study.

The quantitative results of the present study are not comparable to those of previous studies that have evaluated respective programs, as these have employed qualitative methodology. For example, DeBusk and Hellison (1989) reported enhanced knowledge of students who participated in a TPSR program, and Hastie and Buchanan (2000) reported enhanced responsibility and empowerment for students who received a combination of the SE and TPSR models.

On the contrary the qualitative results showed that students had experiences that promote responsibility, enhanced motivation for participation in the program and transfer of responsibility to other settings. Considering the lower-order themes, students reported that they acted responsibly because of (a) their personal values (justice, personal improvement, commonwealth, self-improvement, interest), (b) related practice (participation, cooperation, learning new roles, content, way of learning), (c) external social pressure (obligation, avoiding consequences, avoiding punishment, good impression to others, classroom atmosphere), and (d) pursuance and maintenance of good emotional status (pleasure, enjoyment, avoiding bad feelings, positive feelings). Thus, responsible behavior emanates both from personal factors (such as personal values and the need for good emotional status) and from social factors (such as external social pressure). The above are consistent with the responsibility literature (Gilligan, 1982; Kohlberg, 1984; Lickona, 1992).

Furthermore, students' interviews showed an increased motivation for participation in the program. A variety of themes were linked with motivational variables showing enjoyment, interest and effort in part of the students. Most of the prior studies that evaluated the TPSR and SE models confirmed that students enjoyed their participation (Hastie 1998; Wallhead & Ntoumanis, 2004), had fun and liked being with friends (Carlson & Hastie, 1997) and applied increased effort (Martinek et al., 2001). Nevertheless, four themes emerged describing negative comments regarding the implementation of the program. Some participants resented it because they found hockey difficult and the program too long. They also mentioned problems in cooperation and some incidents of unfairness. These findings correspond to those of Wright and Burton (2008) who reported «...a continuous struggle to motivate and engage students» (p. 146).

Regarding the comparison between the program and physical education, the themes that appeared indicate that students realized many differences regarding the increased autonomy they had and in the development of responsibility. They also reported higher intrinsic motivation and better cooperation between students. Similarly, Walsh (2007) reported that a TPSR program implemented during and extended school day compared favorably to the normal school day in terms of youth development outcomes. However, there were also statements indicating that some

students did not understand any differences between the intervention program and the typical physical education program. Finally, the themes students arose from the comparison of themselves before and after the program indicate that they felt more responsible and more autonomous. They also mentioned that they developed knowledge, more respect to athletic equipment, and they changed their manners.

Another possible effect of the program was the transfer of responsible behaviors to the class and to students' home. Answers indicated both transfer and non-transfer of these behaviors out of the program. If we take into account the frequency of these answers, we can comment that the participants transferred more easily the responsibility to home than to the class. This might indicate fewer opportunities to demonstrate responsibility in class than in home. The transfer of responsibility out of the program to the students' every day life is one of the central goals of Hellison's model. In two prior studies (DeBusk & Hellison, 1989; Martinek et al., 2001), it was suggested that longer intervention programs should have been used in order to achieve this goal. However, Wright and Burton (2008) presented evidence that students saw the potential for applying TPSR lessons to real life even in short interventions. The length of this study is considered a short one, in order to expect adequate levels of transfer out of the program.

Regarding the contradiction between the quantitative and the qualitative results, a possible interpretation and a comment regarding the epistemological nature of the measures needs to be stressed. The quantitative results show that the experimental group of students as a whole did not improve compared to the control group. However, this may be due to a portion of students who were not really engaged in the program, something which is common in respective interventions (Goudas & Giannoudis, this issue). Second, although the qualitative and the quantitative results may seem contradictory, one should bear in mind that these two different methods represent different world views or axioms. The qualitative research paradigm aims at understanding and reaching an interpretation of the setting while the quantitative paradigm aims at experimental verification and prediction (Sparkes, 1992). To this end, both sets of results may be "valid" in providing answers to different kinds of questions.

## **APPENDIX**

### ***The student interview schedule***

Can you describe to me the hockey lessons you did during the last few weeks?

Are there any differences in how you were taught hockey and how you are taught other sports in physical education?

Can you tell me a few things about the roles you had in hockey lessons?

How did you assign roles?

What roles did you assume?

Are there any advantages in taking different roles?

Are there any disadvantages in taking different roles?

Were there specific duties for each role?

How did you learn the duties for each role?

Are there any advantages for having specific duties for each role?

Are there any disadvantages for having specific duties for each role?

When you took a role did you do all the duties associated with this role?

When you take a role at class or at home do you do all the duties associated with this role?

Will you be able to do your duties irrespectively of the situations?

Do you think that hockey lessons helped you?

Can you tell me an example of behaving differently after the hockey lessons?

Has this program helped you to understand someone who takes up a role and makes mistakes?

Why do we have to take care of the sport apparatus?

What do you think was the purpose of this program? Do you think that this was achieved?

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