

Assessment of the effects of a cooperative play programme for children aged 10-11 years on social adaptation and on the perception that parents, teachers and peers have of children's prosocial behaviours

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Abstract

The objective of this research was to design a cooperative play programme in order to assess its effects on social adaptation and on the perception that parents, teachers and peers have of children's prosocial behaviours. The study used an experimental pre-posttest design with control group. The sample included 86 participants aged 10 to 11 years, 54 in the experimental group and 32 controls. Before and after administering the programme, three evaluation instruments were applied. The intervention consisted of a weekly two-hour play session throughout the school year. The programme's activities stimulate communication and prosocial behaviour. Results of the analysis of variance suggest positive impact of the intervention, as the experimental participants significantly increased their behaviours of self-control and leadership, as well as their prosocial behaviour; moreover, an increase was observed in the number of classmates considered prosocial. Highest levels of improvement were found in the experimental participants who, at pretest, had few behaviours of consideration for others, self-control and leadership and low prosocial behaviour, but many withdrawal behaviours. Some effects of the programme were found to be influenced by gender, as the girls showed more decrease in their withdrawal behaviours and a greater increase in the number of classmates perceived as prosocial.

Keywords: Intervention programme, social adaptation, childhood play, peer perception, socialisation.

Evaluación de los efectos de un programa de juego cooperativo para niños de 10-11 años en la adaptación social y en la percepción que padres, profesores y compañeros tienen de las conductas prosociales de los niños

Resumen

Esta investigación tuvo por objetivo diseñar un programa de juego cooperativo y evaluar sus efectos en la adaptación social y en la percepción que padres, compañeros y profesores tienen de las conductas prosociales de los niños. Se utilizó un diseño experimental pretest-posttest con grupo de control. La muestra fue de 86 sujetos de 10 a 11 años, 54 experimentales y 32 de control. Antes y después del programa se aplicaron 3 instrumentos de evaluación. El programa consistió en realizar una sesión semanal de dos horas de duración durante un curso escolar. Las actividades del programa estimulan la comunicación y la conducta prosocial. Los resultados de los análisis de varianza sugieren un positivo impacto del programa ya que los experimentales incrementaron significativamente sus conductas de autocontrol, de liderazgo y prosociales, así como el número de compañeros de grupo considerados prosociales. Mejoraron más los experimentales que en pretest tenían pocas conductas de consideración, de autocontrol, de liderazgo, bajo nivel de conducta prosocial y muchas conductas de retraimiento. Se encontraron algunos efectos del programa en función del sexo, ya que las niñas disminuyeron más sus conductas de retraimiento y aumentaron más el número de compañeros percibidos como prosociales.

Palabras clave: Evaluación de intervenciones, adaptación social, juego infantil, imagen de los compañeros de grupo, socialización.

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In the introduction, the characteristics of the games that comprise the cooperative and creative play program assessed in this study are described. Then, the studies that have pointed out the positive effects of peer play on social development in the last few decades are analyzed, underlining some types of play (sociodramatic and cooperative) with special positive impact on the participants' social behavior. Lastly, the objectives and research hypotheses are specified.

Cooperative and creative games are defined on the basis of five structural characteristics: 1) *participation*, as in these games, all the members of the group participate, nobody is ever eliminated, and there are no winners or losers; the objective consists of achieving group goals, for which each participant has a necessary role in the game; 2) *communication*, because all of the games in the program structure intragroup communication processes that involve listening, dialogue, decision-making, negotiation, and so on; 3) *cooperation*, as the games in the program stimulate the players to help each other in order to contribute to a common aim, a group goal; 4) *fiction and creation*, given that the games involve representation of reality, "pretending" that we are lions, trees, tables, and so on, as well as the combination of stimuli to create something new; and 5) *fun*, because with these games, the aim is for the group members to enjoy interacting in a positive, constructive, and creative way with their colleagues. The play program assessed in this study contains cooperative games with and without socio-dramatic components.

This work is based on the conclusions of studies that have confirmed the important contribution of play in child socialization. These studies, carried out with different methodologies, have suggested that play is of tremendous value for the child's development and social adaptation. Various studies (see Garaigordobil, 2003a; Smith, 2005) have confirmed that play enhances communication and cooperation with peers. In order to play, children must come to an agreement with others who are experiencing and reflecting diverse forms of emotional relations, perception, and assessment of situations; they must coordinate actions with those of others, offer and provide help, and complement the role of their peers. In play, children gain experience of cooperation, participation, and of being accepted or rejected; they also become aware of the image others have of them. Play creates a wide-ranging relational context—it provides a laboratory of communication and social development. Play is a form of social behavior; in play, children encounter social situations and learn to cooperate, help, share, and solve social problems. These social behaviors require children to think, consider others' points of view, make moral judgments, develop social skills, and acquire conceptions of friendship.

Social play provides an important context for the development of socially competent behavior. A review of research reveals that certain forms of play have important implications for the development and refinement of social information processing, empathy, emotion regulation, conflict management, perspective-taking, and skilled social interaction (Creasey, Jarvis & Berk, 1998), while several studies confirm that social play is associated with positive markers of social competence (e.g., Cheah, Nelson & Rubin, 2001), and others have found substantial associations between peer-interactive play and social-emotional development (Gagnon & Nagle, 2004).

Research on the contribution of *sociodramatic play* has confirmed its important role in social development and shown that systematically applied programs increase positive social behaviors (prosocial behaviors, respect for social norms, etc.) and decrease negative ones (aggressive, antisocial, etc.). A pioneering work was that of Freyberg (1973), who observed that this type of play led to more

positive interactions and less aggression between peers. Subsequently, its role in the development of cooperative social aptitudes (Rosen, 1974), prosocial behaviors, and the reduction of overt aggression has been confirmed (Udwin, 1983). In the 1990s, the meta-analysis by Fisher (1992) that analyzed 46 studies that assessed the effects of play programs, confirmed that play promotes improvement in social development; likewise, the study by Honing (1999) confirms that sociodramatic play increases prosocial and reduces antisocial behavior. A recent experimental study by Ballou (2001), evaluating the effects of a program carried out with 24 children from a potential risk group, confirmed the role of dramatic play in socialization. The results show that the experimental participants improved significantly compared to the controls as far as social skills are concerned.

With regard to the therapeutic value of play, various studies (Fall, Navelski & Welch, 2002; Sato, Sato, Takayama & Aikawa, 1993) have confirmed this effect, as children with problems of social relations and aggressive behavior who participated in play experiences significantly improved their social behavior. Similarly, Baggerly (1999), combining different types of play, and with a therapeutic approach, found evidence for a decrease in aggressive and withdrawal behaviors through the effect of the play program. Recently, it has been confirmed that sociodramatic play increases positive social behaviors (helping, sharing, negotiating, etc.) and, taking into account the influence of gender, it was observed that boys pay more attention, seek more information, need more affirmation, and employ more physical aggression than girls (Seider, 2002).

Another line of research has measured the effects of *cooperative play* programs, confirming that this type of play stimulates cooperative behavior (Blazic, 1986; Mender, Kerr & Orlick, 1982; Orlick & Foley, 1979; Orlick, McNally & O'Hara, 1978) and sharing behaviors (Orlick, 1981), increases positive physical and verbal contact during free play, and leads to less negative physical contact and negative verbal interaction (Grineski, 1991). Other studies have underlined the value of cooperative play as an instrument to develop prosocial behavior. Carlson (1999), assessing the effects of cooperative play sessions on 24 students who had trouble working cooperatively in groups, found that the program produced an increase in helping and cooperative behaviors, the capacity to incorporate others, and group cohesion. Recently, it has been shown that cooperative games requiring teamwork and mutual respect among all members reduce the amount of self-reported peer rejection in classrooms (Mikami, Boucher, & Humphreys, 2005), while studies comparing the effects of cooperative play programs with those of competitive play programs confirm the benefits of the cooperative type on socialization. In the cooperative programs, there were a greater number of positive social behaviors (Finlinson, 1997; Finlinson, Austin & Pfister, 2000), fewer aggressive behaviors (Bay-Hinitz, Peterson & Quilitch, 1994), and more high-level negotiation strategies and shared experiences (Zan & Hildebrandt, 2003).

The main aim of the present work is to apply a cooperative and creative play program oriented to children aged 10 to 11 years, and assess its effects: (1) on social adaptation that is expressed in behaviors such as consideration for others (social sensitivity or concern for others, in particular for those who have problems and are rejected or marginalized), self-control (obeying rules and social norms that facilitate living together with mutual respect) leadership (ascendance, popularity, initiative, self-confidence, and a spirit of service), withdrawal (drawing away from others, which can lead to extreme isolation) and anxiety (fear, nervousness, shyness, shame), and (2) on the perception that

parents, teachers and peers have of children's prosocial behaviors (positive social behaviors with and without altruistic motivation).

The study forms part of a research line developed since the 1990s, involving the design, application and assessment of several psychological intervention programs based on cooperative play for different age groups, and whose purpose is to promote the development of personality (Garaigordobil, 2003a, 2004a). The antecedents of this research are the design and assessment of two intervention programs, one for 6 to 8-year-olds (Garaigordobil & Echebarría, 1995; Garaigordobil, Maganto & Etxeberría, 1996), and one for 8 to 10-year-olds (Garaigordobil, 1996, 1999, 2003b). The results obtained in the evaluation of these programs support the importance of play for child development. Many previous studies have shown the positive effects of play on the social development of pre-school children, but the effectiveness of play in late childhood has been very little explored. Therefore, and given the importance of play as a socialization instrument, in this study, I attempt to explore whether this kind of activity is still useful to improve social adaptation in late childhood.

The general hypothesis of the present study is that the program will stimulate a significant improvement in the participants; specifically, four hypotheses are proposed: (1) The program will promote social adaptation, which will manifest in an increase in positive social behaviors (consideration for others, self-control and leadership behaviors) and a decrease in negative social behaviors (withdrawal and anxiety-shyness behaviors); (2) The program will improve the perception that parents, teachers, and peers have of the children's prosocial behaviors. Moreover, taking into account the observations when implementing cooperative play programs at other ages (8-10 years), it is hypothesized (3) that the program will be especially effective for participants who, in the pretest phase before beginning the intervention, have a low level of social adaptation (few positive social behaviors and many negative social behaviors), and (4) that gender will not have a significant bearing on the effects of the program.

Method

Participants

Taking into account all the schools in the area, two were chosen at random. The sample was made up of 86 participants aged 10-11 years, in four groups from two schools in the País Vasco (northern Spain). The sampling unit was the school class. From the complete sample, two groups were randomly assigned to the experimental condition (54 participants), and two groups were assigned to the control condition (32 participants). Thirty-four of the participants were male and the other 52 were female. The analysis of χ^2 showed no significant gender differences, $\chi^2(1, n = 86) = 3.76$, $p > .05$. The control and experimental groups were equivalent in terms of age, sex, academic aptitude, and achievement. The participants had an average socio-economic and educational background: 39% of parents had a university degree, 35% had secondary education, and 26% had elementary education. After selecting the schools, a meeting was held with the head teachers and the teachers of the classes involved, who decided to participate in the study after the presentation of the project. Parents had already been informed about the study at a meeting and had given their consent. Four teachers and 86 parents participated in the study and they completed a questionnaire to inform about their perception of the children's prosocial behaviors. There were no refusals to participate or sample attrition.

Materials

In order to evaluate the effects of the program, three assessment instruments with psychometric guarantees were collectively administered to the experimental and control groups.

BAS. Battery of Socialization (Silva & Martorell, 1987). The BAS is a rating scale with 75 statements, and the adaptation has 4 response categories (*not at all, a bit, pretty much, a lot*). By means of self-report, this battery measures social adaptation by exploring various social behaviors, such as: consideration for others, leadership, self-control, isolation-withdrawal, and anxiety-shyness. The task consists of reading statements and answering whether or not the content of the item can be self-applied. Examples of these statements are: "I am concerned about people being left out," "I help others when they have problems," "I am popular within the group," "I organize groups' work," "I avoid situations involving lots of people," "I answer back to adults," etc. The maximum score in the scales consideration for others, self-control and isolation-withdrawal is 42 points, and for the scales of leadership and anxiety-shyness, 32.

PBQ. Prosocial Behavior Questionnaire (Weir & Duveen, 1981). This test assesses the perception that parents and teachers have of children's prosocial behaviors. The instrument contains 20 items referring to various prosocial behaviors, examples of which are: "if there is an argument or a fight, tries to stop it;" "shares sweets with classmates;" "helps other children when they feel unwell;" and "invites new classmates to join in the game." Teachers report the behaviors observed in their pupils, whereas parents assess the behavior of their children in the family context. The items are rated on a scale with 3 options: *rarely applies, applies somewhat, certainly applies*. The maximum score of the scale is 60 points.

SQ. Sociometric Questionnaire: prosocial classmate (Moreno, 1934/1972). This questionnaire allows one to assess the perception that peers have of their classmates' prosocial behavior. The present study used an adaptation of Moreno's sociometric technique. An open question is put to each member of the group, asking them before and after the intervention to name the most prosocial classmates, that is, those who are the most helpful and cooperative with others (helping, sharing, collaborating, consoling, etc.). The responses provide an assessment of group members' image of their classmates with regard to their prosociality. The number of choices is open, so that the participants can indicate as many classmates as they wish. The number of times each pupil is mentioned by his or her classmates is counted. Pupils receive one point each time they are named, and the maximum score is equal to the number of group members. The information obtained permits identification of the people considered prosocial.

Design and Procedure

The study employed an experimental pre-post design with control group. In the pretest phase, during the early weeks of the school year, three evaluation instruments were administered to measure the dependent variables on which it was hypothesized the program would have positive effects. The instruments were applied to the experimental and control groups by the school psychologists with the cooperation of psychology students doing their practicum. These students had been trained in seminars prior to the administration of the tests, thus making for greater homogeneity in the collection of data. The parents and teachers received information about the project in meetings at the beginning of the school year and gave their informed consent to carry out the study. After

explaining the procedure to complete the PBQ, parents and teachers had two weeks to observe and complete the questionnaires, which were anonymous.

Subsequently, the experimental groups took part in the psychological intervention program, which consisted of a weekly play session throughout the academic year. The sessions took place during school time and, while the experimental groups were involved in them, the controls carried out ethics activities from the normal school curriculum (Ethics is a school subject in Spain). In the posttest phase, during the final months of the school year, the same evaluation instruments as at pretest were applied, in order to measure the change in the dependent variables that were the object of the study.

The research team of the study was made up of the two teachers who implemented the program in the two experimental classrooms, together with the school psychologists and two final-year psychology students who carried out the pretest-posttest evaluation and the filming and observation of the intervention sessions. Training of the team took place fortnightly throughout the academic year. This training focused both on the program itself and on its evaluation.

The structured intervention based on cooperative games consisted of a weekly two-hour session involving two or three activities and their corresponding debates. These sessions were carried out at the same time each week, and in the same physical space, an activity room or gym. The intervention was directed by the class teacher corresponding to each group, with the help of an observer. The sessions always followed the same procedure. First of all, with the group members sitting on the floor in a circle, the aims and instructions of the activity were presented. Next, the group carried out the activity, usually in small teams. At the end of the activity, the group members once again sat down in a circle, the teams presented their conclusions, and a discussion or debate about the activity began. This debate phase was a time for reflection and dialogue (guided by the teacher) in which the results of the activity performed by the group were analyzed. Successively, and following this scheme, 2 or 3 activities took place in each intervention session. The session concluded with a brief closing phase. In the debate stages, the adult asked the group questions about the objectives of the activities they had carried out and also about the positive or negative behaviors observed during the game. The aim of the questions was to promote the group members' reflection about the behaviors occurring during the games so they would appraise whether or not they had achieved the objectives of the activity, and also about the moral consequences and implications of their social behaviors. Furthermore, in the first session, there was an introduction to the program, explaining what was going to take place during the coming school year, and in the final session, there was a debate in which the members of the group gave their views on the experience.

The games included in the program stimulate communication, cohesion, confidence, and the development of creativity. Underlying all of them is the idea of acceptance, cooperation and sharing while playing and inventing together. The activities of the program are structured on the basis of cooperative interactions that promote prosocial behavior, and are distributed in four modules or types of games: verbal creativity, dramatic creativity, graphic-figurative creativity, and plastic-constructive creativity games. The program uses various group dynamics techniques for the development of the action (games based on communication, cooperation, dramatization, drawing, brainstorming, incomplete sentences, and so on) and other techniques to stimulate and regulate discussion or debate, such as guided discussion by means of the formulation of questions.

The intervention program (Garaigordobil, 2004b) has two main objectives. In the first place, to promote socio-emotional development, stimulating: 1) communication processes within the group (presenting, listening, dialogue, negotiating, making decisions by consensus, etc.); 2) friendly interactions and moral and prosocial behavior (helping, cooperating, sharing, consoling, etc.); 3) the expression of emotions through words, drawing, or dramatizing; 4) improvement of self-concept; and 5) learning techniques of analysis and resolution of human conflicts. And secondly, to promote intelligence and creativity, in: 6) factors such as verbal, graphic, constructive, and dramatic creativity; and 7) other intellectual aspects, such as the capacity for symbolizing, verbal and non-verbal reasoning, or associative thinking.

By way of an example, there follows the description of two sessions of the program. The first of these begins with an activity called "*one word, a thousand stories*," the aim of which is to promote: the pleasure of inventing, habits of active listening in communication, cooperation, and verbal creativity. In this game, there is a bag containing pieces of paper with words written on them, and a player chosen at random removes one, the "magic word." Each team, made up of 5 children, must invent a story cooperatively, with contributions from all the members. One player invents a part of the story by contributing 2 or 3 sentences, and stops; the next player continues with more sentences, and successively, in turns, all the members of the team do the same until a story with a beginning, a middle, and an end is developed. In a second phase, the group members sit in a large circle and read out loud the invented stories, and a debate begins, in which questions such as the following come up: "Do you like the stories you've made up?" "Did you all contribute?" "Did you listen attentively when one of your companions was making a contribution?"

The second activity of the session, entitled "*freezing the photo*," has the goal of stimulating: emotional expression through music, movement, and acting, the development of active listening habits, cooperation, group cohesion, and dramatic creativity. In this activity, the group is divided into 4 teams, and each team receives a different photograph showing various things or people/characters. The task consists of memorizing the photograph, assigning the roles of the characters or other elements it contains, choosing a narrator for the image, and making up a brief story about it that the narrator will use. After a time for preparing the scene shown in the photograph, music is played, and all the players dance around the room to it. When the adult stops the music, the members of the team (each team has its turn) must get together as quickly as possible and reproduce the scene in the photograph. At this point, the narrator of each team describes the characters and the scene while his/her fellow team members represent the scene statically, and the rest of the children observe the composition as spectators. In the first round, when the music stops, Team 1 freezes the photo, in the second round, Team 2, and so on. This is followed by the debate phase in which questions are brought up such as: "Did you all cooperate by contributing ideas?" "Were there any problems organizing the static representation of the photograph—for example, distributing the roles, etc.?" "How did you resolve these problems?"

The second session begins with an activity called "*dramatized photo puzzle*," whose aim is to promote: emotional expression, listening, cooperation, group cohesion, and dramatic creativity. In the first phase of the game, each 6-player team receives 6 envelopes, one for each player, with 4 puzzle pieces in each envelope. The first part of the game consists of reconstructing the photo by putting together the 24 pieces available from all the group members. The reconstruction should be cooperative, with each player placing his or her pieces

in the photograph that is being reconstructed; nobody can touch another person's pieces, but they are allowed to help by suggesting where the pieces are supposed to go. In the second phase, each group observes the photograph it has reconstructed by putting the pieces together and, from what the photo suggests to them, they must invent cooperatively, with everyone's contribution, an original story with a beginning, a middle, and an end, which they will subsequently act out. After distributing the roles, they make the materials needed for the representation, they dress up, and in the third phase, each group in turn acts out its story. Afterwards, there is a debate in which questions are raised such as: "Did you all contribute to the reconstruction of the photograph and the invention of the story?" "How did you invent the story in each team?"

The session closes with the activity "*Toothpick sculptures*," the aim of which is to promote: communication, cooperation, and plastic-constructive creativity. In this game, each team must make a sculpture using a box of toothpicks. They must first come up with ideas, choosing one of them by consensus and making the sculpture cooperatively, with the contribution of all. At the end, there is an exhibition of the sculptures, and each team must explain how it made the decision about which sculpture to make, and describe the procedure followed for its construction. In the debate, questions are raised such as: "Was it fun to make toothpick sculptures?" "Did you take into account the ideas of all the members of the team?" "Did you all make a contribution to this activity?"

Results

Effects of the program on social adaptation and on perception that parents, teachers and peers have of children's prosocial behaviors

With the aim of assessing the change in the variables studied, the means and standard deviations were calculated for each variable in the experimental and control groups, and in the pretest and posttest phases, as well as the pretest-posttest difference, with the raw scores obtained in the variables measured before and after the intervention. Likewise, analyses of variance were carried out with the pretest data, and analyses of covariance of the posttest-pretest differences using the pretest scores as covariates. All analyses were carried out with the SPSS 13.0 program.

The pretest MANOVA (Multivariate Pillai) carried out with all the variables did not reveal significant differences between the two groups, experimental and control, $F(1, 84) = .77, p > .05$. However, the results of the MANOVA of the pretest-posttest differences, $F(1, 84) = 3.15, p < .01$, as well as the results of the pretest-posttest MANCOVA, were indeed significant, $F(1, 84) = 4.04, p < .001$, and the effect size was quite large ($\eta^2 = .322; r = .56$). These results confirm that the pretest-posttest group differences were significant ($p < .05$), and this indicates a positive effect of the program on social adaptation and on perception that parents, teachers and peers have of children's prosocial behaviors. In order to analyze the change in each variable, the descriptive and variance analyses shown in table I were performed.

Changes in social adaptation: With the aim of assessing the impact of the program on various self-assessed social behaviors, an analysis was made of changes in the BAS scores. The pretest MANOVA carried out with the set of social behaviors measured indicated that the experimental and control participants were, a priori, homogeneous, as there were no significant differences between them, $F(1, 84) = 1.22, p > .05$. However, the pretest-posttest MANOVA, $F(1, 84) = 2.22, p < .05$, and the pretest-posttest MANCOVA were statistically significant, $F(1, 84) = 3.62, p < .01$, with large effect size ($\eta^2 = .195$;

TABLE I
Means, standard deviations, analyses of variance and covariance in experimental and control groups for social behaviors and perception of classmates

	Experimental Group (n = 54)						Control Group (n = 32)						Experimental - Control (n = 86)			
	Pretest		Posttest		Pre-Post		Pretest		Posttest		Pre-Post		ANOVA F(1, 84)			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	Pre-Post	Pre-Post		
BAS																
Consideration for others	29.44	7.08	32.44	5.71	3.00	6.19	27.66	6.20	30.19	6.24	2.53	5.48	1.40	2.92	0.12	1.51
Self-control	30.52	5.36	31.96	6.32	1.44	6.81	29.03	5.44	27.12	5.90	-1.91	4.21	1.52	12.37 ***	6.30 *	8.41 **
Withdrawal	6.85	5.08	5.48	5.37	-1.37	4.97	6.16	6.34	5.06	5.30	-1.09	5.43	0.31	0.12	0.05	0.16
Anxiety-shyness	9.28	4.58	7.57	5.47	-1.70	5.01	9.16	4.10	9.03	5.34	-0.13	3.91	0.01	1.45	2.33	1.90
Leadership	17.04	5.27	20.26	5.75	3.22	4.80	15.00	4.98	16.38	6.12	1.38	4.78	3.12	8.73 **	2.98	6.14 *
PBQ																
Prosocial teachers	39.11	14.08	42.43	12.57	3.31	13.20	39.37	11.81	41.26	9.58	2.42	7.26	0.00	0.20	0.12	0.17
Prosocial parents	41.22	8.86	46.46	7.28	5.24	7.99	40.50	8.82	41.00	10.81	0.61	7.34	0.13	7.72 ***	7.00 ***	10.49 **
SQ																
Prosocial classmate	3.69	3.07	6.07	3.32	2.39	2.26	3.50	2.78	4.81	2.61	1.31	1.82	0.07	3.38	5.23 *	5.96 *

* p < .05. ** p < .01. *** p < .001.

$r = .44$). From the results shown in table I, it can be observed that in the self-control behaviors, the pretest ANOVA was nonsignificant, $F(1, 84) = 1.52, p > .05$; however, both the pretest-posttest ANOVA, $F(1, 84) = 6.30, p < .05$, and the pretest-posttest ANCOVA, $F(1, 84) = 8.41, p < .01$, were significant favoring the experimental group. The same course was observed in leadership behaviors, in which the pretest ANOVA showed differences at the level of a trend, $F(1, 84) = 3.12, p = .081$, though the pretest-posttest ANCOVA, $F(1, 84) = 6.14, p < .05$, confirmed significant differences. The experimental group significantly increased the behaviors of self-control in interaction with others ($M = 1.44$), when compared to the control, who even showed a decrease in these behaviors ($M = -1.91$). Likewise, the experimental group significantly increased leadership behaviors ($M = 3.22$) compared to the controls ($M = 1.38$).

Changes in perception that parents and teachers have of children's prosocial behaviors: The results of the pretest MANOVA indicated that there were no significant differences, a priori, between the experimental group and the control group, $F(1, 84) = .09, p > .05$. However, the pretest-posttest MANOVA, $F(1, 84) = 3.53, p < .05$, and the pretest-posttest MANCOVA, $F(1, 84) = 5.19, p < .01$, showed significant differences between the two conditions. The results of the pretest ANOVA for the prosocial behaviors assessed by parents revealed no group differences, $F(1, 84) = .13, p > .05$, but the pretest-posttest ANOVA, $F(1, 84) = 7.00, p < .05$, and the pretest-posttest ANCOVA, $F(1, 84) = 10.49, p < .01$, were both significant. As can be seen in table I, according to the parents' opinion, there was a significant increase in prosocial behaviors in the experimental participants ($M = 5.24$) compared to the controls ($M = .61$).

Changes in perception that peers have of classmates' prosocial behavior: The pretest ANOVA revealed no significant group differences before beginning the intervention, $F(1, 84) = .07, p > .05$; however, both the pretest-posttest ANOVA, $F(1, 84) = 5.23, p < .05$, and the pretest-posttest ANCOVA, $F(1, 84) = 5.96, p < .05$, showed significant differences between the two conditions. As can be seen in table I, the experimental participants significantly increased the number of classmates named as prosocial ($M = 2.39$) compared to the controls ($M = 1.31$).

Effects of the intervention on participants with low level of social adaptation

In order to assess whether the program was especially effective for participants who in the pretest phase, before beginning the intervention, showed low levels in social adaptation (i.e., few positive social behaviors—consideration for others, self-control, leadership, prosocial behaviors—, many negative social behaviors—withdrawal, anxiety-shyness—, being named infrequently by their classmates as prosocial), the experimental participants were classified in 3 profiles or categories according to their pretest scores. Profile 1 (P1) included participants who obtained raw scores lower than percentile 30, Profile 2 (P2) scores corresponded to percentiles between 30 and 70, and Profile 3 (P3) scores were higher than percentile 70. This procedure was used with regard to all variables. Subsequently, with the aim of verifying whether the program had a significant effect on experimental participants who, a priori, had different levels of social adaptation, ANOVAS were carried out on the profiles in the pretest phase, and on the pretest-posttest differences (see Table II), in addition to Tukey's post-hoc multiple comparison analyses.

As it can be seen in table II, in relation to *social behaviors of consideration for others* (n : P1 = 16, P2 = 22, P3 = 16), the results of the analysis of variance showed that the pretest-posttest difference of means between profiles was significant, $F(2, 51) = 21.03, p < .001$. Tukey's post-hoc multiple comparison analyses revealed significant

TABLE II
Means, standard deviations and analyses of variance in each profile for social behaviors and perception of classmates

	Pretest						Pretest-Posttest Differences						ANOVA F(2, 51)	
	Profile 1		Profile 2		Profile 3		Profile 1		Profile 2		Profile 3			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	Pretest	Pre-Pos
BAS														
Consideration for others	21.19	3.08	29.00	2.00	38.31	2.30	8.56	4.88	2.68	4.92	-2.13	4.05	196.20 ***	21.03 ***
Self-control	22.20	3.19	30.97	2.52	37.30	2.67	5.40	5.64	1.76	6.87	-3.60	4.72	81.03 ***	5.16 **
Withdrawal	1.92	1.12	5.86	1.57	14.58	4.50	2.38	5.36	-1.86	3.34	-4.25	5.74	88.09 ***	7.25 **
Anxiety-shyness	4.06	1.24	9.23	1.90	14.56	2.94	-0.69	3.14	-1.05	5.38	-3.63	5.71	98.33 ***	1.74
Leadership	10.64	2.54	16.13	1.94	24.54	2.73	6.36	4.11	2.87	4.84	1.38	4.23	116.89 ***	3.74 *
PBQ														
Prosocial teachers	18.92	7.13	40.27	5.70	54.60	3.02	13.85	9.35	3.54	10.82	6.20	13.24	144.36 ***	11.10 ***
Prosocial parents	29.23	3.52	41.61	3.97	52.38	2.84	9.62	7.68	6.29	7.85	-1.38	3.66	132.94 ***	8.55 ***
SQ														
Prosocial classmate	0.69	0.48	3.35	1.20	8.42	2.02	3.25	1.29	2.19	2.21	1.67	3.08	125.74 ***	1.93

+ p < .09. * p < .05. ** p < .01. *** p < .001.

differences for P1 ($M = 8.56$) with P2 ($M = 2.68$) and with P3 ($M = -2.13$), as well as between P2 and P3. In the *social behaviors of self-control* (n : P1 = 10, P2 = 34, P3 = 10), the results of the pretest-posttest ANOVA confirmed significant differences between profiles, $F(2, 51) = 5.16, p < .01$. However, Tukey's test only showed differences between P1 ($M = 5.40$) and P3 ($M = -3.60$). In the *social behaviors of withdrawal* (n : P1 = 13, P2 = 29, P3 = 12), the ANOVA results confirmed that the pretest-posttest difference of means between profiles was significant, $F(2, 51) = 7.25, p < .01$. Tukey's *post hoc* analysis revealed significant differences for P1 ($M = 2.38$) with P2 ($M = -1.86$) and with P3 ($M = -4.25$), but there were no differences between P2 and P3. With regard to *social behaviors of anxiety* (n : P1 = 16, P2 = 22, P3 = 16), the change in the different profiles was similar, $F(2, 51) = 1.74, p > .05$. In *leadership behaviors* (n : P1 = 11, P2 = 30, P3 = 13), the pretest-posttest ANOVA confirmed significant differences between profiles, $F(2, 51) = 3.74, p < .05$. However, Tukey's test only showed differences between P1 ($M = 6.36$) and P3 ($M = 1.38$). With regard to the *perception that parents and teachers have of children's prosocial behaviors*, the results in table II show that the change in the different profiles was significant, both for the teachers' assessment (n : P1 = 13, P2 = 26, P3 = 15), $F(2, 51) = 11.10, p < .001$, and for that of the parents (n : P1 = 13, P2 = 28, P3 = 13), $F(2, 51) = 8.55, p < .001$. In the prosocial behaviors assessed by the teachers, significant differences were found between all the profiles, for P1 ($M = 13.85$) with P2 ($M = 3.54$) and with P3 ($M = 6.20$), as well as between P2 and P3. In the prosocial behaviors assessed by parents, differences were found between P1 ($M = 9.62$) and P3 ($M = -1.38$), as well as between P2 ($M = 6.29$) and P3 ($M = -1.38$), but no differences were observed between P1 and P2. These results indicate that the participants showing the greatest increase in their prosocial behaviors were those who had a very low level in this type of behavior at pretest, according to the perception of their parents and teachers.

Influence of gender on the effects of the program

Finally, in order to assess whether the play program had a significant effect on the participants according to gender, analyses of variance were carried out. Their results are presented in table III.

The pretest MANOVA for the set of social behaviors measured with the BAS showed differences as a function of gender, $F(1, 52) = 2.43, p < .05$. However, these differences refer solely and specifically to behaviors of consideration for others, $F(1, 52) = 5.22, p < .05$, in which the girls scored higher ($M = 31.41$) than the boys ($M = 27.16$) before the intervention. The results of the pretest-posttest MANOVA, $F(1, 52) = 1.84, p > .05$, and the pretest-posttest MANCOVA, $F(1, 52) = 1.64, p > .05$, did not indicate overall differences between gender. Nevertheless, for withdrawal behaviors, the pretest-posttest ANOVA $F(1, 52) = 5.88, p < .05$, and the pretest-posttest ANCOVA, $F(1, 52) = 8.22, p < .01$, showed significant gender differences (see Table III). As can be observed in Table 3, for withdrawal behaviors, boys presented a slight increase ($M = .32$), whereas girls presented a significant decrease ($M = -2.83$). The pretest MANOVA in the prosocial behaviors assessed by teachers and parents with the PBQ showed significant a priori differences, $F(1, 52) = 7.45, p < .001$. However, neither the results of the pretest-posttest MANOVA, $F(1, 52) = .83, p > .05$, nor those of the pretest-posttest MANCOVA, $F(1, 52) = 1.08, p > .05$, revealed gender differences. Finally, in the sociometric choice of prosocial classmates, the pretest ANOVA showed significant gender differences, $F(1, 52) = 6.40, p < .05$, and the pretest-posttest ANCOVA also revealed differences, $F(1, 52) = 6.73, p < .05$. As can be seen in table III, the girls named more classmates as prosocial before the

TABLE III
Means, standard deviations and analysis of variance for social behaviors and perception of classmates in males and females

	Pretest				Pretest-Posttest Differences				ANOVA		ANCOVA	
	Males (n = 25)		Females (n = 29)		Males (n = 25)		Females (n = 29)		F(1, 52)		F(1, 52)	
	M	SD	M	SD	M	SD	M	SD	Pretest	Pre-Post	Pre-Post	Pre-Post
BAS												
Consideration for others	27.16	7.50	31.41	6.17	3.64	6.89	2.45	5.58	5.22 *	0.49	1.27	
Self-control	30.16	5.89	30.83	4.95	0.00	7.66	2.76	5.80	0.20	2.39	3.11	
Withdrawal	7.32	5.77	6.45	4.47	0.32	5.28	-2.83	4.25	0.39	5.88 *	8.22 **	
Anxiety-shyness	8.68	4.21	9.79	4.89	-0.60	4.32	-2.66	5.43	0.79	2.31	1.12	
Leadership	16.76	5.48	17.28	5.16	3.92	5.09	2.62	4.53	0.12	0.98	0.06	
PBQ												
Prosocial teachers	33.32	13.82	44.10	12.49	4.00	14.21	2.72	12.49	9.07 **	0.12	2.03	
Prosocial parents	37.44	8.35	44.48	8.07	6.72	7.64	3.97	8.20	9.90 **	1.61	0.27	
SQ												
Prosocial classmate	2.60	2.16	4.62	3.45	1.84	2.10	2.86	2.33	6.40 *	2.84	6.73 *	

* $p < .05$. ** $p < .01$. *** $p < .001$.

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intervention ($M = 4.62$) than did the boys ($M = 2.60$), and as a result of the program, the girls increased this figure significantly more ($M = 2.86$) than the boys did ($M = 1.84$), and these differences were statistically significant.

Conclusions and Discussion

The results suggest a positive impact of the program, with experimental participants showing a significant improvement in socialization. The findings indicate: 1) an increase in behaviors of self-control of impulses and deference to the social norms that facilitate mutual respect in group situations; 2) an increase in leadership behaviors associated with initiative, public-spiritedness, and popularity; 3) improved perception by parents and classmates of the children's prosocial behaviors.

Consequently, Hypothesis 1, which proposed that the program would improve social adaptation was partially verified, as the behaviors of self-control and leadership increased. Likewise, Hypothesis 2 was also partially verified. In prosocial behavior, parents and classmates noted a significant change in the experimental group. Teachers observed greater change in the experimental participants, although the differences were not statistically significant. An explanation for this may be that the teachers in the experimental group were more sensitized to the construct that was the object of evaluation and intervention—prosocial behavior—, so their assessment was stricter. It should be stressed, nevertheless, that the results for nominations of classmates as prosocial persons are to be interpreted with caution, as group sizes were different, so that a child from a relatively large class could potentially receive more nominations than a child from a smaller class. It might therefore be appropriate to replicate the study with groups of similar size.

These results are in the same line as those obtained in other studies that have suggested the benefits of play programs, sociodramatic play, and cooperative games in children's social development and social adaptation. Previous works have indicated a positive effect of sociodramatic play on social behavior and social skills (Ballou, 2001; Fisher, 1992; Honing, 1999; Seider, 2002; Udwin, 1983), as well as significant influence of cooperative games on prosocial behavior (Bay-Hinitz *et al.*, 1994; Blazic, 1986; Carlson, 1999; Finlinson, 1997, Finlinson *et al.*, 2000; Mender *et al.*, 1982; Orlick, 1981; Orlick & Foley, 1979; Orlick *et al.*, 1978; Zan & Hildebrandt, 2003) and peer interactions in the classroom (Mikami *et al.*, 2005).

Furthermore, analysis of the change according to the levels of social adaptation or profiles leads to the conclusion that the program was especially beneficial for participants who, before the intervention, displayed few behaviors of consideration for others, self-control, and leadership, and prosocial behaviors, as well as many withdrawal behaviors. These results confirm Hypothesis 3, which proposed that the program would especially affect those with low levels of social adaptation. Nevertheless, the number of participants in the extreme profiles is small, so that the results should be interpreted with caution. Future research should provide empirical evidence of the effectiveness of the program in children with problems of social development and social adaptation.

Finally, two differential effects of the program were found in relation to gender. The girls decreased their withdrawal behaviors more and improved the image of their classmates as prosocial persons to a greater extent. Nevertheless, in the behaviors of consideration for others, self-control, leadership, and anxiety-shyness, and in the prosocial behaviors, boys and girls changed similarly, thus

partially confirming Hypothesis 4, which proposed that the program would not have differential effects as a function of gender.

The research carried out provides an instrument of psychological intervention for enhancing child socialization in these age groups, for which there is a notable absence of this type of program. Furthermore, the present work completes a line of psychological intervention based on play to improve socialization. Factors that may explain the results include both the actual structural characteristics of the play activities in the program (participation, communication, help, cooperation, etc.), the type of interaction they promote among group members, and the meta-cognitive importance of the phases of debate and dialogue that take place after each activity. Thus, it can be considered that both the moral action implied in the activities and the meta-cognition of that action built into the debates provide a source of moral development and determine, to some extent, the results obtained.

The intervention improved the perception of classmates because it changed their behavior. Many of the program activities obliged participants to cooperate in order to achieve the goal; moreover, during the debates, the adult reinforces the prosocial behaviors observed. The verbal reinforcement by the adult and the reinforcement of achieving the goal of the activity through cooperation lead to an increase in friendly and prosocial behaviors in the group members in general, and this influences in their seeing others more positively.

We consider that it is precisely the cooperative interaction and dialogue generated in this play experience that help foster a positive group climate, favoring greater development in individuals with more problems of social adaptation. Thus, the results show the therapeutic effect of this type of intervention. Moreover, the effects obtained lead us to consider that a good context in which to help children with socioemotional development problems is their natural educational group, where they can find individuals of the same age but with heterogeneous levels in factors of socioemotional development (prosocial behavior, empathy, social perspective, etc.). This role of the school as a development context has already been pointed out by other researchers. In synthesis, prosocial behavior activated in play, debates dealing with various relevant themes (such as the negative effect of aggressive behavior on others), or in which group members are reinforced for their positive social behaviors (helping each other, listening to one another, cooperating, etc.), contextualized in the cognitive-behavioral theoretical framework, may explain the positive effects obtained with the program.

A possible limitation of the present work concerns the use of experimental designs in natural educational contexts, as such designs may be affected by confounding variables that influence the results. Therefore, future research may consider the use of mixed designs, incorporating observational methodology as a complement. Future lines of research may consider: 1) assessing the effect of the program in interaction with the characteristics of the supervising adult; 2) assessing the effects of this intervention program, based on cooperative and creative play, on other factors of personality development—for example, self-concept, cognitive strategies of social interaction; 3) assessing the effects of the program in children with relevant socialization problems; and 4) comparing the effects of this cooperative play program with the effects of competitive play programs.

References

- BAGGERLY, J. N. (1999). Adjustment of kindergarten children through play sessions facilitated by fifth grade students trained in child-centered play therapy procedures and skills. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 60 (6-A), 1918.

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- BALLOU, K. J. (2001). The effects of a drama intervention on communication skills and learning attitudes of at-risk sixth grade students. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 61 (10-A), 3828.
- BAY-HINITZ, A. K., PETERSON, R. F. & QUILITCH, H. R. (1994). Cooperative games: A way to modify aggressive and cooperative behaviors in young children. *Journal of Applied Behavior Analysis*, 27, 435-446.
- BLAZIC, CH. (1986). The impact of a cooperative games program on a fifth grade class: A field study. *Dissertation Abstracts International*, 47 (3-A), 785.
- CARLSON, J. M. (1999). Cooperative games: A pathway to improving health. *Professional School Counseling*, 2 (3), 230-236.
- CHEAH, CH. S., NELSON, L. J. & RUBIN, K. H. (2001). Nonsocial play as a risk factor in social and emotional development. In A. Goncu & E. L. Klein (Eds.), *Children in play, story, and school* (pp. 39-71). New York: Guilford Press.
- CREASEY, G. L., JARVIS, P. A. & BERK, L. E. (1998). Play and social competence. In O.N. Saracho & B. Spodek (Eds.), *Multiple perspectives on play in early childhood education. SUNY series, early childhood education. Inquiries and insights* (pp. 116-143). New York: State University of New York Press.
- FALL, M., NAVELSKI, L. F. & WELCH, K. K. (2002). Outcomes of a play intervention for children identified for special education services. *International Journal of Play Therapy*, 1 (2), 91-106.
- FINLINSON, A. R. (1997). Cooperative games: promoting prosocial behaviors in children. *Dissertation Abstracts International*, 35 (06), 1582.
- FINLINSON, A. R., AUSTIN, A. B. & PFISTER, R. (2000). Cooperative games and children's positive behaviors. *Early Child Development and Care*, 164, 29-40.
- FISHER, E. P. (1992). The impact of play on development: A meta-analysis. *Play and Culture*, 5, 159-181.
- FREYBERG, J. T. (1973). Increasing the imaginative play of urban disadvantaged kindergarten children through systematic training. In J. L. Singer (Ed.), *The child's world of make-believe* (pp. 129-154). New York: Academic Press.
- GAGNON, S. G. & NAGLE, R. J. (2004). Relationships between peer interactive play and social competence in at-risk preschool children. *Psychology in the Schools*, 41 (2), 173-189.
- GARAIGORDOBIL, M. (1996). *Evaluación de una intervención psicoeducativa y sus efectos sobre la conducta prosocial y la creatividad* [Assessment of a psychoeducational intervention and its effects on prosocial behavior and creativity]. Madrid: Editorial del Ministerio de Educación y Ciencia. First National Prize for Educational Research, 1994.
- GARAIGORDOBIL, M. (1999). Assessment of a cooperative-creative program of assertive behavior and self-concept. *Spanish Journal of Psychology*, 2, 3-10.
- GARAIGORDOBIL, M. (2003a). *Intervención psicológica para desarrollar la personalidad infantil. Juego, conducta prosocial y creatividad* [Psychological intervention for developing children's personality. Play, prosocial behavior and creativity]. Madrid: Pirámide.
- GARAIGORDOBIL, M. (2003b). *Programa Juego 8 - 10 años. Juegos cooperativos y creativos para grupos de niños de 8 a 10 años* [Play program for 8 to 10-year-olds. Cooperative and creative games for groups of children aged 8 to 10]. Madrid: Pirámide.
- GARAIGORDOBIL, M. (2004a). Effects of a psychological intervention on factors of emotional development during adolescence. *European Journal of Psychological Assessment*, 20, 66-80.
- GARAIGORDOBIL, M. (2004b). *Programa Juego 10 - 12 años. Juegos cooperativos y creativos para grupos de niños de 10 a 12 años* [Play program for 10 to 12-year-olds. Cooperative and creative games for groups of children aged 10 to 12]. Madrid: Pirámide.
- GARAIGORDOBIL, M. & ECHEBARRÍA, A. (1995). Assessment of a peer-helping game program on children's development. *Journal of Research in Childhood Education*, 10, 63-69.
- GARAIGORDOBIL, M., MAGANTO, C. & ETXEBERRÍA, J. (1996). Effects of a cooperative game program on socio-affective relationships and group cooperation capacity. *European Journal of Psychological Assessment*, 12, 140-151.
- GRINESKI, S. C. (1991). Effects of cooperative games on the prosocial behavior interactions of young children with and without impairments. *Dissertation Abstracts International*, 51 (8-A), 2629.
- HONING, A. S. (1999). Creating a prosocial curriculum. *Montessori Life*, 11 (2), 35-37.
- MENDER, J., KERR, R. & ORLICK, T. (1982). A cooperative games program for learning in disabled children. *International Journal of Sports Psychology*, 13 (4), 222-233.
- MIKAMI, A. Y., BOUCHER, M. A. & HUMPHREYS, K. (2005). Prevention of peer rejection through a classroom-level intervention in middle school. *Journal of Primary Prevention*, 26 (1), 5-23.
- MORENO, J. L. (1972). *Fundamentos de la sociometría* [Foundations of sociometrics]. Buenos Aires: Paidós. (Original work published 1934).
- ORLICK, T. (1981). Positive socialization via cooperative games. *Developmental Psychology*, 17, 426-429.
- ORLICK, T. & FOLEY, C. (1979). Pre-school cooperative games: A preliminary perspective. In M. J. Melnick (Ed.), *Sports sociology: Contemporary themes* (2nd ed., pp. 266-273). Dubuque, Iowa: Kendall/Hunt.
- ORLICK, T., McNALLY, J. & O'HARA, T. (1978). Cooperative games: Systematic analysis and cooperative impact. In F. Small & R. Smith (Eds.), *Psychological perspectives in youth sports* (pp. 203-225). Washington, D.C.: Hemisphere.
- ROSEN, C. (1974). The effects of sociodramatic play on problem solving behavior among culturally disadvantaged preschool children. *Child Development*, 45, 920-927.
- SATO, S., SATO, Y., TAKAYAMA, I. & AIKAWA, A. (1993). Social skills training with aggressive kindergarten children: Maintenance of social skills by coaching. *Japanese Journal of Behavior Therapy*, 19 (2), 20-31.
- SEIDER, C. K. (2002). Factors affecting the frequencies of social behaviors and social goals of preschoolers across three types of dramatic play in an urban setting. *Dissertation Abstracts International: Section A: Humanities & Social Sciences*, 62 (11-A), 3685.
- SILVA, F. & MARTORELL, M. C. (1987). *BAS-3. Batería de Socialización* [Battery of Socialization]. Madrid: TEA.
- SMITH, P. K. (2005). A child's work: The importance of fantasy play. *Infant and Child Development*, 14 (1), 103-104.
- UDWIN, O. (1983). Imaginative play training as an intervention method with institutionalized preschool children. *British Journal of Educational Psychology*, 53, 32-39.
- WEIR, K. & DUVEEN, G. (1981). Further development and validation of the prosocial behaviour questionnaire for use by teachers. *Journal of Child Psychology and Psychiatry*, 22 (4), 357-374.
- ZAN, B. & HILDEBRANDT, C. (2003). First graders' interpersonal understanding during cooperative and competitive games. *Early Education and Development*, 14 (4), 397-410.