EFFECTIVENESS OF A SOCIAL SKILLS PLAY-BASED TRAINING PROGRAM INTERVENTION FOR CHILDHOOD SOCIAL ANXIETY

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Abstract

Social anxiety (SA) is a common experience for many children when faced with social situations. This study presents the application of a play-based school program in social skills training (SST) for children aged between 9 and 12. The experimental group consisted of 87 students from disruptive classrooms. From this group we further analyzed a subgroup of children with high SA (*n*= 34). A reference group of 25 students, belonging to a non-disruptive classroom from the same school served as a comparison group for the program's social validation. SA was assessed with the "Social Interaction Questionnaire for Children" (SAQ-CIII), giving an overall score of social anxiety and specific ratings in each of six dimensions. Results at post-intervention and at 6-month follow-up showed an improvement in the experimental group and, in particular, the high SA subgroup, with large effect sizes. In addition, this subgroup of high SA decreased their social anxiety at post-intervention to the same level as the reference group in four dimensions of the SAQ-CIII and on the overall social anxiety score of this questionnaire. These results provide initial support for the effectiveness of SST with children for decreasing SA.
KEY WORDS: *social anxiety, social skills, children, intervention, treatment, effectiveness.*

Resumen

La ansiedad social (AS) es una experiencia habitual de muchos niños cuando se enfrentan a situaciones sociales. Este estudio evalúa la eficacia de un programa lúdico y escolar de entrenamiento en habilidades sociales (EHS) para niños de 9 a 12 años. El grupo experimental estaba formado por 87 alumnos pertenecientes a clases conflictivas. De dicho grupo se analizó al subgrupo de niños con elevada AS (*n*= 34). Un grupo de referencia de 25 alumnos, pertenecientes a una clase no conflictiva del mismo colegio, constituyó el grupo de comparación para la validación social del programa. La AS se evaluó con el "Cuestionario de interacción social para niños" (CISO-NIII), de forma global y por dimensiones. Los

resultados de la posintevención y el seguimiento (seis meses) mostraron una mejoría del grupo experimental y, especialmente, del subgrupo de alta AS, con tamaños de efecto grandes. Además, este subgrupo de alta AS disminuyó en la fase de posintervención su ansiedad al nivel del grupo de referencia en cuatro de las dimensiones y en la AS global. Estos resultados respaldan la eficacia del EHS con niños para la disminución de la AS.

PALABRAS CLAVE: *ansiedad social, habilidades sociales, niños, intervención, tratamiento, eficacia.*

Introduction

Following Wong and Rapee (2015), social anxiety is a common experience that occurs in response to the perceived threat of being negatively evaluated by others before, during, or after involvement in social situations. For some individuals, the level of social anxiety experienced is sufficiently high to negatively impact their functioning and cause distress, in which case a diagnosis of social anxiety disorder (SAD) is warranted (Ollendick, Benoit, & Grills-Taquechel, 2014). The latest edition of the Diagnostic and statistical manual of mental disorders (DSM-5; American Psychiatric Association [APA], 2013) presents the same SAD diagnostic criteria for children and adults, although it does provide some specific qualifiers when diagnosing the disorder in children. For example, the new manual indicates that in children, "the anxiety must occur in peer settings and not just during interactions with adults" (p. 202). According to the DSM, the 12-month prevalence rates of SAD in children and adolescents are comparable to those in adults, ranging from 2.3% in Europe to 7% in the United States. However, these estimates are not very reliable since different rates have been found depending on the specific study and where it was conducted. For example, a study by Burstein et al. (2011) in the United States found a prevalence rate of social phobia in adolescents (aged 13 to 18) of 8.6 (9.2% in females and 7.9 in males), while some studies in Spain reported estimates of 1.2% to 14.2% in children and adolescents (Bragado, Bersabé, & Carrasco, 1999; Bragado, Carrasco, Sánchez, & Bersabé, 1996; Olivares, 2005; Taboada, Ezpeleta, & De la Osa, 1998).

Regarding the assessment and treatment of social anxiety in children, much remains to be accomplished. Overall, there are fewer studies supporting both the validity and reliability of the assessment tests and the effectiveness of intervention programs. In the case of self-report assessment tests of social anxiety in children, three instruments have been used primarily: the Social Anxiety Scale for Children-Revised (SASC-R; La Greca & Stone, 1993), the Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 1995), and the Liebowitz Social Anxiety Scale for Children and Adolescents (LSAS-CA; Masia-Warner, Klein, & Liebowitz, 2002). Each of these measures was generated in English-speaking countries and has major limitations when applied to Spanish-speaking countries, either due to the specific content of the items or to the way the items were formulated (Caballo, Salazar, Irurtia, Arias & Nobre, 2013; Salazar, 2013). Recently, in order to address some of these problems, our team developed the "Social Anxiety Questionnaire for Children" (SAQ-C) (Caballo, Arias, Calderero, Salazar, &

Irurtia, 2011; Caballo, Arias, Salazar, Calderero, Irurtia, & Ollendick, 2012) based on samples of youth collected in Spain, Portugal, and Ibero America. This questionnaire contains six empirically derived dimensions of social anxiety in children: 1) Interactions with the opposite sex, 2) Speaking in public/Interactions with teachers, 3) Criticism and embarrassment, 4) Interactions with strangers, 5) Assertive expression of annoyance or disgust, and 6) Performing in public. Some of the situations included in the questionnaires originating in English-speaking countries do not appear to be useful in Spanish-speaking countries (e. g., "writing in public", "urinating in a public bathroom"), as has been found in the case of adults (Caballo et al., 2015; Caballo, Salazar, Irurtia, et al., 2012) Hence, the importance of empirically developing an instrument for children from Ibero American and Spanish samples is evident. A version of this SAQ-C was used in the current study.

When treating social anxiety in children and adolescents, multicomponent cognitive-behavioral programs which commonly include exposure, social skills training (SST), and cognitive techniques are frequently used. However, the utility of these cognitive techniques is less clear given the young age of the children frequently enlisted in such studies (Beidel, Turner, & Young, 2006). For this reason, Beidel Turner, and Morris (1996), in their Social Effectiveness Therapy for Children (SET-C), only include exposure and SST as intervention procedures of their evidence-based program, given that the therapy deals with children aged 8 to 12. Cognitive restructuring could be of help for older children (adolescents), but less so for younger children because they have not yet achieved a level of cognitive development that allows for the presence of "future-oriented" cognitions or they mistake the presence of negative feelings for negative thoughts (Beidel & Turner, 1998). On the other hand, social skills deficits seem to characterize many forms of child psychopathology, particularly social anxiety (Foster & Bussman, 2008; Matson & Ollendick, 1988).

It is common, particularly in the case of children, to use school-based interventions, because this setting provides an ecologically valid context in which social concerns are noted. Exposure and SST are the essential procedures of this type of school-based intervention. However, to date such interventions have focused more on adolescents than children (Masia-Warner, Colognori, Brice, & Sánchez, 2015; Mesa, Le, & Beidel, 2015), as can be seen in programs such as Therapy for Adolescents with Social Phobia ("Intervención en adolescentes con fobia social", IAFS; Olivares 2005) and Skills for Academic and Social Success (SASS; Masia, Klein, Storch, & Corda, 2001). It is unclear whether what works for adolescents will also work with children, particularly when comparing children aged 9, 10 or 11 with adolescents aged 15, 16 or 17. It seems to be desirable for programs to be more specific at these ages, particularly with regard to certain dimensions of social anxiety, such as "Interactions with the opposite sex". SST-based intervention programs commonly include different kinds of skills, such as "Initiating conversations", "Giving and receiving compliments", and so on (Matson & Ollendick, 1988). It is not clear whether all the kinds of social skills needed are included in these programs (e.g., Caballo, Salazar, Olivares, et al., 2014), or whether those skills match the dimensions of social anxiety found in

children (Caballo, Arias, et al*.,* 2011, 2012) and adults (Caballo et al*.,* 2010; Caballo, Salazar, Irurtia, et al*.,* 2012). In other words, it seems clear that exposure and SST are the necessary techniques for intervention in childhood social anxiety (Beidel & Turner, 1998); what are less clear are the specific skills that need to be taught and the specific dimensions of social anxiety that need to be addressed.

Overall, the effect size of cognitive behavioral programs for the treatment of childhood social anxiety disorder (or social phobia) ranges from moderate to high. However, it is difficult to draw firm conclusions on the implementation of such programs for children, since the age of participants is overly broad, including, for example, children aged 7 to 17 (e.g., Alfano et al*.,* 2009; Beidel et al*.,* 2007), and for the most part, children and adolescents are combined together in systematic reviews. For example, in the meta-analytic review by Olivares, Caballo, García-López, Rosa, and López-Gollonet (2003) on the effectiveness of the treatment of social phobia, the age of participants varied from 7 to 17. If we restrict this meta-analysis solely to those studies with participants under the age of 14, we find only two studies. One of them, by Beidel, Turner, and Morris (2000), applied the SET-C program to 50 children aged 8 to 12 with generalized social phobia, and the effect size (Cohen's *d*) pre-post-intervention was found to be 1.24 and 1.75 at 6-month follow-up (using the SPAI-C as the assessment measure). The other study, by Spence, Donovan, and Brechman-Toussaint (2000), applied a multicomponent program, with emphasis on SST, to 50 children aged 7-14 and the effect size (Cohen's *d*) of the pre-post-intervention improvement was 1.26 and 1.49 at 12-month follow-up. In a more recent study undertaken by Caballo, Calderero, Carrillo, Salazar, and Irurtia (2011), the program "Playing and Learning Social Skills" (JAHSO) was applied to 30 children aged 9-14 who had social anxiety (measured by the Social Interaction Questionnaire for Children [SAQ-CIII], a former version of the Social Anxiety Questionnaire for Children [SAQ-C]), and the effect size (Cohen's *d*) pre-post-intervention was 0.93 for the total score of the questionnaire (the specific effect size [*d*] for each of the six dimensions of the SAQ-CIII varied from 0.17 to 1.80). Finally, in a more recent study, Donovan, Cobham, Waters, and Occhipinti (2015) used a cognitive behavioral intervention program involving 40 children aged 7-12 with a clinical diagnosis of social phobia, and the effect size (Cohen's *d*) pre-post-intervention was 1.04 and 1.41 at the 6-month follow-up (using the SPAI-C as the assessment measure).

The goal in the current study was to test the effectiveness of a play-based SST school program (JAHSO) targeting disruptive children aged 9-12 and designed to reduce their social anxiety. In addition, we sought to determine whether children improved clinically, i.e., whether their social anxiety decreased to the level of non-disruptive children of the same age and environment (known as social validation; see Kazdin, 1977).

Method

Participants

The participants in this study were 112 students, 65 boys and 47 girls, from fourth, fifth and sixth levels of Primary Education, and aged between 9 and 12 years. They were drawn from six classes in a state school in the province of Granada, Spain. Initially 96 students from five disruptive classes formed the intervention group, although nine students were discarded because they missed several sessions or left many questions unanswered in their questionnaire. Of the 87 students who participated in the intervention program, 53 were boys with a mean age of 10.43 years (*SD*= 1.13) and 34 were girls, with a mean age of 10.59 (*SD*= 0.96). The reference group was composed of 25 students randomly selected from a sixth-level class without any special issues at the same school, of which 12 were boys with a mean age of 11.33 years (*SD*= 0.65) and 13 were girls, with a mean age of 11.08 (*SD*= 0.64) (Table 1).

Table 1
Distribution by age and sex of the subjects participating in the study

Group	Age (years)	Boys (*n*)	Girls (*n*)	Total (*N*)
Intervention	9	15	5	20
	10	12	10	22
	11	14	13	27
	12	12	6	18
	Total	53	34	87
Reference	10	1	2	3
	11	6	8	14
	12	5	3	8
	Total	12	13	25

Instruments

The assessment instrument used at pre- and post-intervention and follow-up was the "Social Interaction Questionnaire for Children" (SAQ-CIII) (Caballo, Arias, et al., 2011). This self-report measure was a preliminary version of the "Social Anxiety Questionnaire for Children" (SAQ-C) (Caballo, Arias, et al., 2012) and consists of 52 items plus two control items. Each of the items is answered on a Likert scale of 1-4 points depending on the degree of embarrassment or nervousness associated with each item (1= "None" to 4= "A lot"). Exploratory factor analysis of the SAQ-CIII, conducted with a sample of 1810 children from 18 schools, resulted in a 6-factor solution that explained 60.61% of variance (Caballo, Arias, et al., 2011). These factors or dimensions included: 1) Interactions with the opposite sex (7 items), 2) Speaking in public/Interaction with teachers (7 items), 3) Criticism and embarrassment (6 items), 4) Interactions with strangers (6 items), 5) Assertive expression of annoyance or disgust (5 items), and 6) Performing in public

(4 items). Higher scores in each dimension and the total score reflect higher social anxiety. The questionnaire has good psychometric properties, with high internal consistency (Cronbach's alpha= .93; Guttman split-half reliability= .95). The selection of this questionnaire was based on its special characteristics as a multidimensional measure (including six dimensions) and its use of items specific to Spanish and Portuguese-speaking countries, something not provided by the other measures currently used internationally to assess social anxiety in children.

Procedure

The research involved six teachers-tutors (three women and three men) from six classes who volunteered to participate. All the teachers had more than six years' experience. The staff team, the counselor and the teachers-tutors all received information about the goals of the intervention plan. These teachers helped to evaluate some of the variables chosen and other aspects associated with the intervention program. However, the same psychologist applied the play-based intervention program in the five disruptive classes that constituted the experimental group over a three and a half month period. No student was excluded, and the whole class participated in the program. The sixth non-disruptive class served as a reference group, and did not receive any intervention.

The selection of the experimental groups was carried out by the staff at the school. These groups consisted of the most conflicted and troublesome students at the school, and therefore required immediate attention. The decision was made to respect the natural formation of the groups at the initial stage of the study, and implement the intervention program as a tutorial activity as naturally as possible. The main problems presented by these groups were frequent conflicts between students (threats, insults, and physical attacks). However, not only was aggressive behaviors commonplace in these classrooms, as there were also high rates of passive and withdrawn behavior in which many of the students felt helpless about dealing with the aggressive behavior of the other students. Due to the serious problems presented by the five disruptive classes and the importance of immediate action, it was not possible to use one of these classes as a control group. It was deemed unethical not to intervene in a group that required prompt action. However, we used a class without any special problems as a reference group. The idea was to see whether following the intervention the students in the disruptive classes possessed the same level of social behavior as the reference group in the variables measured. In this way, we could socially validate the intervention (Kazdin, 1977).

The research was implemented in four stages:

1) *Pre-intervention assessment*. In this phase, the SAQ-CIII and other questionnaires (not considered in this study) were administered to the intervention and reference groups.

2) *Intervention*. The "Playing and Learning Social Skills" (JAHSO) program was delivered to the intervention group for fourteen 60-minute sessions at a rate of one session per week. The reference group received no intervention.

3) *Post-intervention assessment*. Following the intervention, the same assessment instruments in phase 1 were administered again to the intervention and reference groups.
4) *Follow-up assessment*. Six months after the intervention, the SAQ-CIII was administered once again to the students in the intervention group who were still at school (see below). The reference group was not assessed in the follow-up.

Brief description of the intervention program

"Playing and Learning Social Skills" (JAHSO) is a school-based social skills program for children aged between 9 and 14 years. The first part (seven sessions) is devoted to providing students with a set of social skills. The dimensions of social skills include: 1) Introduction to social skills including styles of behavior, 2) Giving and receiving compliments, 3) Expressing positive and negative feelings, 4) Initiating, maintaining and ending conversations, 5) Making and rejecting requests, 6) Dealing with criticism and coping with it, and 7) Interpersonal problem-solving.

Learning each skill involves following several steps: 1) review of the homework of the social skill taught in the previous week (except for the first skill), 2) definition of the skill, 3) importance of the skill, 4) steps to perform the skill, 5) examples to check that what has been explained in the session has been understood, 6) group activities in which the skill is taught through group exercises and behavior rehearsal, and 7) homework, so that students can practice outside the session the skills taught. The program's sessions are described in more detail in the Appendix.

The second part (seven sessions) focuses on practicing the social skills learned in the first part of intervention play activities (called "Sokill Galaxy"). The game includes the following elements: a) a large magnetic board with 72 boxes arranged in the form of two stars, a larger one outside and a smaller one inside; b) a dice; c) 500 six-color cards with tasks (e.g., role-playing) and questions and answers on social skills; d) 300 six-color stars; e) Six player tokens; f) a manual for the group conductor; g) diplomas for the winners of the game; and h) records of participation. The six-color boxes are associated to the six dimensions of social skills. The classroom is divided in groups of 4-6 students. The different groups compete doing the tasks and answering the questions included on the cards. When they do well they receive a star. The first group to reach 15 stars of each color wins the game.

The game helps strengthen the dimensions previously trained, involves more active participation by students, and makes learning of the social skills fun. Basically, this part of the intervention is similar to exposure exercises in other treatments

Statistical analysis

Nonparametric statistical tests were used due to both the small sample size of the reference group (although still a normal distribution in six of the study's seven

variables [Shapiro-Wilk test]) and the scores of the experimental group formed by disruptive students, which did not follow a normal distribution in five of the seven variables used [Shapiro-Wilk test]. Specifically, the Wilcoxon test was used for related samples to compare pre-post-intervention for the two groups and follow-up scores in the experimental group, and the Mann-Whitney test was used to compare the experimental group with the reference group. To find the effect size of the intervention r was used, which was calculated by dividing the z value by the square root of N (number of cases used in the analysis). The interpretation of r values for effect size is relatively similar to Cohen's d. It was considered negligible if it was less than .10, small from .10 to .30, medium between .30 and .50, and high if it was greater than .50. Although we used nonparametric statistics for the analyses, the tables include means and standard deviations of the variables (instead of the median), because we consider them more informative when comparing this study with others in the literature. The statistical package used was Statistica v. 12 (StatSoft, 2013).

In order to obtain more accurate information regarding the results of students with high social anxiety, the experimental group was divided into two subgroups, one with high social anxiety (students who scored above the mean plus one standard deviation on the total score of the SAQ-CIII, according to data obtained in a previous study with a large sample of 1810 students of similar age with no special conflicts) [see Caballo, Calderero, et al., 2011]) and another one with normal anxiety problems (students who scored below the mean plus one standard deviation in the former SAQ-CIII).

Results

The results are presented considering the full experimental group, the high and normal social anxiety subgroups, and the reference group. There were no significant differences in any one of the variables at the pre-intervention stage or among groups of students of different ages (9-12) or among the five classrooms that constituted the experimental group (Kruskal-Wallis test). Although there was a tendency for older children to be less socially anxious, the trend was not uniform, and in no case were the differences statistically significant.

Pre-post-intervention differences regarding the full experimental group

Table 2 shows the scores in the SAQ-CIII and its dimensions regarding the full experimental group before and immediately after the intervention. As can be seen, the experimental group improved significantly ($p< .001$) in each of the six dimensions of the SAQ-CIII and the overall social anxiety score. The effect size of these improvements (r) was medium in the dimensions of "Interaction with the opposite sex", "Criticism and embarrassment", and "Performing in public", and large in the other three dimensions. The effect size in global social anxiety (total score in the SAQ-CIII) was high ($r= .75$).

Table 2
Means, standard deviations and results of the Wilcoxon test for the *full intervention group* before and just after the application of the intervention program on the various dimensions of the SAQ-CIII

SAQ-CIII dimensions	Pre-interv. M (SD)	Post-interv. M (SD)	N*	z	p	r
F1. Interactions with the opposite sex	21.46 (5.49)	19.46 (5.82)	73	3.51	.000	.41
F2. Speaking in public / Interaction with teachers	15.05 (5.34)	12.00 (4.29)	72	5.12	.000	.60
F3. Criticism and embarrassment	16.68 (3.97)	14.54 (3.93)	70	3.96	.000	.47
F4. Interactions with strangers	14.72 (3.81)	12.40 (3.70)	72	4.97	.000	.58
F5. Assertive expression of annoyance or disgust	11.66 (3.93)	9.13 (3.23)	72	5.79	.000	.68
F6. Performing in public	11.08 (2.97)	9.84 (2.92)	73	3.97	.000	.46
Total score	90.90 (15.35)	77.37 (13.68)	63	5.98	.000	.75

Note: SAQ-CIII= "Social Interaction Questionnaire for Children". *Number of subjects used by the Wilcoxon matched pairs test. Effect size *(r)* values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

Pre-post-intervention differences regarding the high social anxiety experimental group

Given that the above results included all the students in the disruptive classes, whether or not they had high social anxiety, we selected students who scored higher than *M + 1SD* in each of the six dimensions and global social anxiety (SAQ-CIII). The number of students for each dimension differed given that a student could have a high score in some factor(s) but not in other(s). Table 3 shows the mean scores and standard deviations (for these seven variables) for that group of subjects before and immediately after the intervention program. Scores were compared by the Wilcoxon test. As can be seen in Table 3, the pre-post-intervention differences remain highly significant (*p*< .001), but now the effect sizes (*r*) are higher, ranging from .78 to .86 in the different dimensions of social anxiety, with a score of .87 in global social anxiety.

Table 3
Means, standard deviations and results of the Wilcoxon test for the subset of *high social anxiety* students before and just after the application of the intervention program

SAQ-CIII dimensions	Pre-interv. M (SD)	Post-interv. M (SD)	N*	z	p	r
F1. Interactions with the opposite sex	25.95 (1.57)	22.15 (4.74)	31	4.37	.000	.78
F2. Speaking in public / Interaction with teachers	20.59 (2.95)	14.15 (3.86)	32	4.89	.000	.86
F3. Criticism and embarrassment	20.80 (1.49)	15.93 (4.40)	28	4.38	.000	.83
F4. Interactions with strangers	18.56 (1.50)	14.12 (3.20)	32	4.56	.000	.81
F5. Assertive expression of annoyance or disgust	15.02 (2.31)	10.69 (2.96)	39	5.37	.000	.86
F6. Performing in public	14.71 (0.69)	11.92 (2.52)	21	3.87	.000	.84
Total score	104.03 (9.78)	84.07 (10.51)	30	4.78	.000	.87

Note: Students with high social anxiety had a score equal to or higher than *M*+1*SD* in the SAQ-CIII before the intervention. SAQ-CIII= "Social Interaction Questionnaire for Children". *Number of subjects used by the Wilcoxon matched pairs test. Effect size (*r*) values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

Table 4
Means, standard deviations and results of the Wilcoxon test for the subset of *normal social anxiety* students before and just after the application of the intervention program

SAQ-CIII dimensions	Pre-interv. M (SD)	Post-interv. M (SD)	N*	z	p	r
F1. Interactions with the opposite sex	17.39 (4.51)	17.02 (5.65)	42	0.87	.381	.13
F2. Speaking in public / Interaction with teachers	11.42 (2.83)	10.51 (3.95)	40	2.05	.040	.32
F3. Criticism and embarrassment	14.39 (2.91)	13.86 (3.35)	42	1.10	.271	.17
F4. Interactions with strangers	11.82 (2.01)	10.91 (3.15)	40	2.10	.035	.33
F5. Assertive expression of annoyance or disgust	8.45 (1.98)	7.73 (2.78)	33	2.11	.035	.37
F6. Performing in public	9.65 (2.20)	8.97 (2.68)	52	2.07	.039	.29
Total score	78.84 (7.62)	71.88 (13.04)	33	3.29	.001	.57

Note: Students with normal social anxiety had a score lower than *M*+1*SD* in the SAQ-CIII before the intervention. SAQ-CIII= "Social Interaction Questionnaire for Children". *Number of subjects used by the Wilcoxon matched pairs test. Effect size (r) values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

Pre-post-intervention differences regarding the normal social anxiety experimental group

We also wanted to find out whether the intervention program had a significant impact on the other students in the experimental group whose level of social anxiety was not problematic (a score of less than the *M + 1SD* in the SAQ-CIII). We compared the pre-post-intervention scores of these students by means of the Wilcoxon test, and found that these differences were statistically significant in four of the six dimensions and the total score of the SAQ-CIII. The effect size was small in one of these four dimensions and medium in the other three (*r*). The effect size was large for the total score of the questionnaire (*r*= .57) (Table 4). In short, the scores of students with normal anxiety decreased in all the dimensions and in overall anxiety; nevertheless, this reduction was not statistically significant for two of the dimensions.

Pre-intervention/follow-up differences regarding the full experimental group

The participants in the full experimental group decreased to 41 students (26 boys and 15 girls) at the follow-up assessment. Table 5 shows the scores of the full experimental group in the SAQ-CIII and its dimensions at pre-intervention and at 6-month follow-up. The effect size of the improvements remained medium or large in four of the six dimensions and in the overall social anxiety score (*r*).

Table 5
Means, standard deviations and results of the Wilcoxon test for the *full intervention group* before the application of the intervention program and at the six-month follow-up

SAQ-CIII dimensions	Pre-interv. *M (SD)*	Follow-up *M (SD)*	*N**	*z*	*p*	*r*
F1. Interactions with the opposite sex	21.46 (5.49)	20.05 (5.98)	37	1.95	.051	.32
F2. Speaking in public / Interaction with teachers	15.05 (5.34)	12.02 (4.69)	37	2.70	.007	.44
F3. Criticism and embarrassment	16.68 (3.97)	15.02 (3.52)	32	2.93	.003	.52
F4. Interactions with strangers	14.72 (3.81)	12.63 (3.94)	33	2.92	.003	.51
F5. Assertive expression of annoyance or disgust	11.66 (3.93)	9.29 (3.72)	37	3.45	.001	.57
F6. Performing in public	11.08 (2.97)	10.17 (2.75)	38	1.82	.069	.29
Total score	90.90 (15.35)	79.13 (13.86)	33	3.41	.001	.59

Note: SAQ-CIII= "Social Interaction Questionnaire for Children". *Number of subjects used by the Wilcoxon matched pairs test. Effect size *(r)* values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

In the two dimensions of the SAQ-CIII in which the effect size was lower, *p* was no longer statistically significant. However, the effect size (*r*) of the improvement was above 0.20 in both cases. The effect size (*r*) decreased slightly in three dimensions ("Speaking in public/Interaction with teachers", "Interactions with strangers", and "Assertive expression of annoyance or disgust") and in the total score of the SAQ-CIII, while it increased in one dimension ("Criticism and embarrassment").

Moreover, there were no statistically significant differences (Wilcoxon test) in any one of the dimensions of the SAQ-CIII or in its global score in the experimental group when the follow-up assessment was compared with the post-intervention one. The *r* was also negligible in all cases (*p*< .10). This indicates that the changes remained stable over the six months following the intervention in the experimental group.

Pre-intervention/follow-up differences regarding the high social anxiety experimental group

Table 6 shows the means and standard deviations of students with high social anxiety (score above the *M + 1SD* in the SAQ-CIII) before the intervention program and in the follow-up. Scores were compared in both stages by the Wilcoxon test. As can be seen, the differences in the follow-up remained significant (*p*< .01). The effect size of the changes increased, and the range of these values was .77 to .88, with a value of .88 for global social anxiety.

Table 6
Means, standard deviations and results of the Wilcoxon test for the subset of *high social anxiety* students before the application of the intervention program and at the follow-up

SAQ-CIII dimensions	Pre-interv. M (SD)	Follow-up M (SD)	N*	z	p	r
F1. Interactions with the opposite sex	25.95 (1.57)	21.47 (5.30)	19	3.56	.000	.81
F2. Speaking in public / Interaction with teachers	20.59 (2.95)	12.93 (3.65)	14	3.29	.001	.88
F3. Criticism and embarrassment	20.80 (1.49)	15.78 (3.44)	16	3.52	.000	.88
F4. Interactions with strangers	18.56 (1.50)	13.00 (4.29)	18	3.27	.001	.77
F5. Assertive expression of annoyance or disgust	15.02 (2.31)	10.48 (3.68)	21	3.61	.000	.79
F6. Performing in public	14.71 (0.69)	10.00 (2.41)	11	2.93	.003	.88
Total score	104.03 (9.78)	81.17 (12.77)	17	3.62	.000	.88

Note: Students with high social anxiety had a score equal to or higher than *M*+1*SD* in the SAQ-CIII before the intervention. SAQ-CIII= "Social Interaction Questionnaire for Children". *Number of subjects used by the Wilcoxon matched pairs test. Effect size (*r*) values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

In addition, there were no significant differences in this group of students for any of the dimensions or in overall social anxiety when comparing post-intervention scores with those obtained at the follow-up (lower in all variables). However, the effect size (*r*) indicated that while it was negligible (*r*< .10) in two dimensions ("Criticism and embarrassment" and "Assertive expression of annoyance or disgust") and global social anxiety, in another three dimensions it was small (.10 > *r* < .30), and in a fourth dimension ("Performing in public") it was large (*r*= .59).

Pre-intervention/follow-up differences regarding the normal social anxiety experimental group

We also compared pre-intervention and follow-up scores in the subgroup of students with normal social anxiety (lower score than the *M* + 1*SD* in the SAQ-CIII). Wilcoxon test was used and no significant differences were found in any one of the dimensions of social anxiety or in the overall score. These data indicate that although social anxiety decreased significantly in the post-intervention stage in this subgroup, these improvements were not maintained at follow-up, at which time the score for most of the dimensions and for overall anxiety returned to its initial pre-intervention level at the 6-month follow-up.

Moreover, there were no statistically significant differences in this subgroup in any of the social anxiety variables when comparing follow-up to post-intervention scores.

Comparison between the results for the full experimental group and the reference group

In order to determine whether the changes in the full experimental group were clinically relevant, i.e., whether they were validated socially, we included a reference group and compared it to the full experimental group at both pre-intervention and post-intervention stages.

The pre-intervention stage presented statistically significant differences (*p*< .05) between the two groups on two dimensions ("Criticism and embarrassment" and "Assertive expression of annoyance or disgust") and in global social anxiety (*p*< .01), and almost significant ones (*p*< .06) in two other dimensions ("Speaking in public/Interaction with teachers" and "Performing in public"). Considering the effect sizes (*r*) between the two groups at the pre-intervention stage, small (.10> *r* < .30) differences were noted in the six dimensions and medium differences (*r*= .30) in overall social anxiety. The experimental group scored higher than the reference group in all the variables.

In contrast, when the full experimental group and the reference group were compared at the post-intervention stage, no statistically significant differences were found on five of the six dimensions or in overall social anxiety. In the sixth dimension, "Interactions with strangers", the full experimental group achieved a significantly lower score than the reference group (*p*< .05). Regarding the effect

size of the differences, it was small only in this last dimension (r= .20); it was negligible in the other five dimensions and in overall social anxiety.

Comparing the results of the high and normal social anxiety experimental subgroups with the reference group

When selecting the subgroup of students who scored high on social anxiety ($M + 1SD$ in the SAQ-CIII), in any of the dimensions and/or in global social anxiety, using Mann-Whitney test we found that this subgroup scored higher than the reference group (p< .001) at the pre-intervention stage in all the variables. The effect size of these differences ranged from r= .54 to r= .78 (Table 7).

When selecting the subgroup of students who did not have social anxiety problems (scoring less than $M + 1SD$ in the SAQ-CIII) in any dimension or in global social anxiety, we found that this subgroup did not differ statistically from the reference group at the pre-intervention stage.

Table 7

Means, standard deviations and results of the Mann-Whitney U test for the subset of *high social anxiety* students and the reference group before the application of the intervention program

SAQ-CIII dimensions	Pre-interv. SA Gr. M (SD)	Pre-interv. Refer. Gr. M (SD)	N*	z adjusted	p	r
F1. Interactions with the opposite sex	25.95 (1.57)	19.24 (6.18)	40/25	4.38	.000	.54
F2. Speaking in public / Interaction with teachers	20.59 (2.95)	12.80 (4.74)	34/25	5.26	.000	.68
F3. Criticism and embarrassment	20.80 (1.49)	14.40 (3.97)	30/25	5.79	.000	.78
F4. Interactions with strangers	18.56 (1.50)	13.48 (3.76)	34/25	5.05	.000	.66
F5. Assertive expression of annoyance or disgust	15.02 (2.31)	9.72 (2.86)	42/25	5.84	.000	.71
F6. Performing in public	14.71 (0.69)	9.72 (3.07)	24/25	5.05	.000	.72
Total score	104.03 (9.78)	79.36 (13.70)	34/25	5.80	.000	.75

Note: SAQ-CIII= "Social Interaction Questionnaire for Children". SA Gr.= high social anxiety students. Students with high social anxiety had a score equal to or higher than $M+1SD$ in the SAQ-CIII before the intervention. Refer Gr.= reference group. N*= Number of subjects of the experimental subgroup/Number of subjects of the reference group. Effect size (r) values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

When we focus on the post-intervention stage and select the subset of students who scored higher in social anxiety ($M + 1SD$ in the SAQ-CIII) in any one of the dimensions and in global social anxiety, we found that this subgroup did

not differ significantly from the reference group on four of the six dimensions and on overall social anxiety. Only in the dimensions of "Interactions with the opposite sex" (*p*< .05) and "Performing in public" (*p*< .01) did the subgroup of high social anxiety score significantly above the reference group (Table 8). In the first of these two dimensions the effect size was small (*r*= .26), while in the second it was medium (*r*= .41). In the other dimensions as well as in global social anxiety, the effect size was small (.10> *r* < .30), except for the dimension "Interactions with strangers", which was negligible (*r*= .01).

Table 8
Means, standard deviations and results of the Mann-Whitney U test for the subset of *high social anxiety* students and the reference group just after the application of the intervention program

SAQ-CIII dimensions	Post-interv. SA Gr. *M (SD)*	Post-interv. Refer Gr. *M (SD)*	*N**	*z* adjusted	*p*	*r*
F1. Interactions with the opposite sex	22.15 (4.74)	19.68 (5.09)	38/25	2.09	.036	.26
F2. Speaking in public / Interaction with teachers	14.15 (3.86)	12.92 (4.40)	34/25	1.11	.265	.14
F3. Criticism and embarrassment	15.93 (4.40)	14.92 (3.73)	28/25	1.32	.185	.18
F4. Interactions with strangers	14.12 (3.20)	14.04 (3.22)	34/25	0.08	.932	.01
F5. Assertive expression of annoyance or disgust	10.69 (2.96)	9.44 (2.72)	42/25	1.60	.108	.19
F6. Performing in public	11.92 (2.52)	9.56 (3.04)	24/25	2.88	.004	.41
Total score	84.07 (10.51)	80.56 (14.36)	30/25	1.18	.239	.16

Note: SAQ-CIII= "Social Interaction Questionnaire for Children". SA Gr.= high social anxiety students. Students with high social anxiety had a score equal to or higher than *M*+1*SD* in the SAQ-CIII before the intervention. Refer Gr.= reference group. *N**= Number of subjects of the experimental subgroup/Number of subjects of the reference group. Effect size (*r*) values following Cohen: < .10, negligible effect; .10-.30, small effect; .30-.50, medium effect; > .50, large effect.

If we focus again on the post-intervention stage and select the subgroup of students without social anxiety problems (scoring less than *M* + 1*SD* in the SAQ-CIII), in any one of the dimensions and in global social anxiety, we find that this subgroup scored significantly lower than the reference group on the dimensions of "Speaking in public/Interaction with teachers" (*p*< .05), "Interactions with strangers" (*p*< .001) and "Assertive expression of annoyance or disgust" (*p*< .01), as well as on global social anxiety (*p*< .05). In the other three dimensions, the differences were not statistically significant. Regarding the effect size of these differences, only on one dimension ("Performing in public") was the effect size negligible (*r*= .09), while in three there were small differences (.10> *r* < .30), a medium difference in one ("Assertive expression of annoyance or disgust"), and

for one dimension ("Interactions with strangers") the difference was large ($r= .45$). The effect size on global social anxiety was medium ($r= .31$).

Pre-post-intervention scores in the reference group

In order to test whether the reference group remained unchanged throughout the intervention period, the SAQ-CIII was administered to the reference group at the pre- and post-intervention stages. Using the non-parametric Wilcoxon test for related samples at the pre and post-intervention stages, no significant differences were found between the scores obtained in the different dimensions of the questionnaire or in its overall score. In short, the social anxiety level of the reference group remained unchanged throughout the intervention program.

Discussion

This study assessed the effectiveness of a play-based school SST program (the JAHSO program) on social anxiety in disruptive children (aged 9-12) by means of a multidimensional self-report measure of social anxiety, the SAQ-CIII. The innovative aspects of this research focused on the play-based SST intervention program and the new multidimensional self-report measure for assessing social anxiety in children (SAQ-CIII), which consists of a global score and six specific scores corresponding to the six dimensions in the questionnaire (Caballo, Arias, et al., 2012; Caballo, Calderero, et al., 2011).

The results show the effectiveness of the program in decreasing the social anxiety of children in disruptive classes. The children in the full intervention group improved significantly in terms of both global social anxiety and on each of the six social anxiety dimensions at the post-intervention stage, with an effect size (r) ranging from medium to large (depending on the specific dimension or the overall score in social anxiety). These improvements in the full group were generally maintained six months after the intervention (follow-up), albeit with a slight decline. Although the effect size also decreased across dimensions, they remained at a value of large ($r> .50$) for three dimensions and for global social anxiety. Although the students in the full group did not improve in a statistically significant way, from post-intervention to follow-up, they did not worsen, supporting the maintenance of changes due to the intervention program six months after its completion.

However, since for practical and ethical issues the play-based intervention program was applied to entire classes (i. e., a universal intervention), not all the students in these classes had high social anxiety. In order to gauge the impact the program specifically had for students with high social anxiety, the results of this subgroup were analyzed separately. In this case, the program's impact was much greater, in terms of both statistical significance and effect size, whether at the post-intervention or follow-up stages. The r values were similar and generally higher than other cognitive behavioral intervention programs with children (aged 8 to 14), usually SST-based to reduce their social anxiety (e. g., Beidel et al., 2000;

Donovan et al*.,* 2015; Spence et al*.,* 2000). Although our sample was not a clinical one, it was selected on the basis of scores on our questionnaire, differing from the clinical samples of those former studies that were generally selected on the basis of a semi-structured interview. Nonetheless, presence of high levels of social anxiety pose a major problem for many school-aged children and a more environmentally friendly way to address it, without individually attending a clinic (or receiving a clinical diagnosis), is the kind of assessment and intervention that we implemented in this study.

The JAHSO program reduced the social anxiety of both children with high anxiety and those with no serious problems with social anxiety (normal SA) at the post-intervention stage, and those gains were maintained, and even increased, at the six-month follow-up but only for those students who initiated the program with high social anxiety, while in the other students (with normal SA) the program's benefits were not evident six months later. One possible explanation is that students with high social anxiety feel more motivated to apply what they have learned during the program, since the application of the skill learned to everyday life is likely to have a greater impact than in the case of children who do not have significant social anxiety problems. In other words, although group intervention programs, focusing on SST, for reducing social anxiety were applied to an entire class, only students with high social anxiety would clearly benefit from this program. This is to be expected. The question to consider is the program's cost/benefit. Is it preferable to use a play-based intervention program within the ecological niche of the classrooms, continuing with their usual routine, or is it more expedient to remove students with high social anxiety from their classrooms to include them in specific clinical intervention groups? Both options have their advantages and disadvantages, and the choice will likely depend on particular conditions present at each school.

This study addressed not only the possible improvement of participating students immediately after the implementation of the program, but also six months after its completion. It also included a reference group of students from a class without special problems that was part of the same school where the play-based intervention program was conducted. The purpose of the inclusion of this group was to find out whether the program would have a clinical effect on participating students, i.e., whether these students would reach the same level of social anxiety as students in the reference group. This is what is referred to as social validation (Kazdin, 1977). The study results at the post-intervention stage showed that, when we consider the full experimental group, the mean of the different dimensions and that of the total score of this group did not differ statistically from the reference group, except in the dimension of "Interactions with strangers", where the full intervention group scored lower ($p<$ .05) than the reference group. Yet what really interested us was whether the subgroup of students with high social anxiety decreased their anxiety to the level of the reference group. Differences in the scores of both groups at the pre-intervention stage were high ($p<$ .0001), including the effect size (r) of these differences (from .54 to .78). After the application of the play-based intervention program, the results showed that in four dimensions and in overall social anxiety the subgroup

with high social anxiety scores matched the reference group. Only in two dimensions, "Interactions with the opposite sex" and "Performing in public" did the differences remain significant (albeit much smaller), with the experimental subgroup showing greater anxiety than the reference group.

One possible explanation for these results would be that the kind of social skills dimensions that were addressed by the play-based intervention program did not coincide exactly with the dimensions of social anxiety assessed by the SAQ-CIII. However, some of these social skills can be considered transdimensional, i.e., they may be useful for improving several dimensions of social anxiety. Accordingly, for example, the social skill "Initiating, maintaining and terminating conversations" may improve the dimensions of social anxiety "Interactions with the opposite sex" and "Interactions with strangers." The social skill "Making and coping with criticism" may improve the social anxiety dimensions of "Criticism and embarrassment" and "Assertive expression of annoyance or disgust," while the social skill "Making and refusing requests" may also improve this last dimension. Overall, SST-based intervention programs for social anxiety tend not to include specific modules for the dimensions composing this last construct (Caballo, Arias, et al., 2012), in children (e. g., Beidel et al., 2000), adolescents (e. g., Olivares, Olivares-Olivares, & Macià, 2014), and adults (e. g., Wagner, Pereira, & Oliveira, 2014), although they were effective in reducing social anxiety. However, given the close relationships between social skills and social anxiety (e. g., Caballo, Olivares, López-Gollonet, Irurtia, & Rosa, 2003; Caballo, Salazar, Irurtia, Olivares, & Olivares, 2014), protocols in which social skills focus on specific dimensions of social anxiety should be more common when intervening in social anxiety, be it in children, adolescents or adults.

This study also has its limitations. The main limitation is the lack of a control group of students from a troublesome classroom with which to compare the experimental group. Although the research conditions did not allow us to establish a control group, it would be desirable for future studies to include such a group. Another limitation was the low number of students in the reference group for social validation purposes, something which could also be addressed in future studies. A possible improvement for future studies would be to replace the SAQ-CIII with the final version of this same questionnaire, the SAQ-C (Caballo, Arias, et al., 2012). Although both questionnaires consist of the same dimensions of social anxiety, the latest version has a more detailed test of its psychometric characteristics. Finally, we would like to note that this study did not use any semi-structured diagnostic interviews to assess the students. It is unclear whether such extensive individual assessment would be of help for this kind of school-based group intervention, where high social anxiety students are mixed with other students. Future research will clarify these matters.

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Appendix

Structure of the "Playing and Learning Social Skills" program (JAHSO)

Session number	Topic	Goals	Description of activities
1	Introduction to social skills: behavior styles	• Highlighting the importance of social skills. • Learning to differentiate between aggressive, passive and assertive styles of behavior. • Understanding and practicing assertiveness. • Encouraging assertive behavior.	Classrooms are divided into two or three-student groups, and each group is given a situation that they will have to role-play in front of their peers. Each student in each group is assigned a role (assertive, passive or aggressive). The rest of the group will have to identify each one of the roles with a style of behavior, and then move to a final reflection on what is the most appropriate style for each situation and why.
2	Giving and receiving compliments	• Learning and practicing the required skills to express and receive positive reinforcement through compliments. • Understanding the importance of positive language in social relationships. • Learning to positively value others and feel valued by them. • Encouraging the payment of compliments to others. • Making relationships with others more enjoyable. • Improving our self-esteem and that of others.	First activity. Say the name of the student next to him/her and then replace the names with compliments. Example: Alice "Funny" "Friendly". Second activity. A chair is placed in a visible place in front of the class; a student sits on the chair and the rest of the group, in order, compliments him/her. Third activity. Each student writes their name on a slip of paper. Once all the names have been written down, the teacher collects and distributes them randomly so that everybody receives a slip with the name of a classmate. Then, one by one, following an order, each student will have to go up to the given classmate and pay them a compliment. Fourth activity. Students start calling out in order a sentence beginning with the words "I like ..." and / or "I'm good at ..." They finish it by saying something they like about themselves and/or something they are good at and they do well.

Session number	Topic	Goals	Description of activities
3	Expressing positive and negative feelings	• Learning to identify feelings. • Developing the ability to generate positive feelings and enjoy them. • Learning to communicate and control negative feelings. • Knowing what to do when someone expresses feelings. • Understanding their own and others' feelings. • Promoting the expression of positive and negative feelings to others.	First activity: Following an order, all the students express how they feel or how they felt in a given situation. They can start by saying: "I feel / felt ... when ... ","I feel / felt ... because ..." Second activity: Each child is given a card with the name of a feeling, then one by one they have to form a phrase with the feeling on their card and why they feel that way. Third activity: Two cards, one with a positive feeling and the other with a negative one. These cards are given to two volunteers. Then one of them gets up and expresses their feeling to a classmate. The other volunteer does the same.
4	Initiating, maintaining and terminating conversations	• Acquiring the skills to initiate, maintain and terminate conversation skills. • Providing the opportunity to establish social contacts. • Learning the importance of responding appropriately when another child wants to have a conversation with him/her. • Learning to ask questions in order to initiate and maintain conversations with others. • Encouraging and motivating students to interact in and out	First activity: Grouping by pairs. For a few minutes one of the partners will talk about what his/her partner wants, and the latter has to listen. When time runs out, the students who have played the listener role will have to tell the classroom what his/her partner told him/her. The roles are then swapped with the students who listened adopting the speaking role. Second activity: Some volunteer students will role-play a range of situations in which they will have to initiate, maintain and terminate conversations. For instance: "A new classmate has arrived in your classroom, she comes from Colombia. You have to initiate, maintain and terminate a conversation with her." Third activity: Each student writes their name on a slip of paper and folds it without showing it. The teacher collects all the slips and distributes them at random, so that

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		of school.	everybody gets a slip with the name of a classmate. Then, in turn, at the front of the classroom, each child will has to initiate, maintain and terminate a conversation with the classmate whose name is written on their slip.
5	Making and refusing requests	• Learning to differentiate reasonable or honest requests from those that are not. • Learning to ask others for favors and for help. • Organizing and verbalizing desires and needs clearly and appropriately. • Encouraging them to implement the skill following the recommended steps. • Knowing how to refuse requests or say "no". • Knowing the importance of refusing requests properly. • Being able to refuse requests properly.	First activity: Volunteer students will make a request to their classmates or the teacher present in the classroom. Second activity: A situation of making a request is randomly distributed to each student. In order, each student makes their request. Third activity: Each student is randomly given one of the situations dealing with saying no. Students have to role-play the given situation in which one makes the request and the other refuses it.
6	Making and coping with criticism	• Learning to differentiate between constructive or well-intentioned criticism from malicious or destructive one. • Losing the fear of expressing criticism. • Identifying situations or times when there is a need to express criticism. • Knowing the importance of learning to express criticism and cope	First activity: Some students will try to express one by one in a friendly manner one or more criticisms to a classmate following the format already described (positive message + negative feeling + change request). Second activity (Mail of criticism): The student will have to write their criticism of a classmate. It is explained that the criticism will be private and not read aloud, only the target of the criticism will read it. Once written down, the students will fold the sheet in half and fold it again so nobody can see what has

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		with it properly. • Learning to apply the skill both to express criticism and to cope with it in everyday situations. • Learning to respect others and be respected.	been written. It will then simulate an envelope, with one side bearing the sender's name (i.e., the person who wrote the criticism) and on the other side, the addressee (i.e., the person to whom the criticism is addressed). Third activity: Each student is randomly put in a situation of coping with criticism. Two students have to role-play the given situation in which one makes the criticism and the other copes with it, according to the instructions given in the modules.
7	Solving interpersonal problems	• Acquiring the necessary problem-solving strategies. • Increasing the personal effectiveness of students in the skill of solving problems in an independent way. • Learning to develop the necessary steps to solve a problem. • Developing creativity in searching for solutions. • Learning to reflect upon the consequences of a given solution. • Promoting assertive and rational responses and blocking the immediate aggressive response. • Relating better and feel more comfortable in our relationships with others. • Avoiding conflicts and arguments about unimportant things.	First activity: Give every two students the card dealing with problem solving, and they will have to answer the following points in written: 1) Identify what the problem is. 2) The options the child of the vignette presents to solve the problem. 3) The style of behavior (assertive, passive or aggressive) that would occur in each solution. 4) The potential consequences of implementing each one of the solutions. 5) Choosing the solution that best solves the problem. Second activity: Ask the students about problems they have had and have not been able to solve and/or known problems that concern them. Groups of three or four students are formed, and each group has to solve the problem using the steps in the problem-solving module.