




Aggressiveness, instability and social-emotional education in an inclusive environment

Agresividad, inestabilidad y educación socioemocional en un entorno inclusivo

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ABSTRACT

In the context of inclusive schools, social-emotional learning encourages student involvement in classroom life and is related to a decrease in maladaptive behaviour. The objective of this study is to analyse the impact of a social-emotional education program on aggressiveness and emotional instability in childhood. Participants were 555 children aged 7 to 12 years ($M=9.2$ and $SD=1.5$), 55.5% boys and 45.5% girls. The children were students of primary education at six public schools in Valencia (Spain). The sample was distributed into an experimental group (317 children; 57.2% of the total participating population) and a control group (238 children). The teachers of the experimental group received training to implement the program in class. The teachers of the control group received no training and did not apply the program. The results in the pre-test and posttest phases in both groups are analysed. In the pretest phase, significant differences appeared between the groups: the experimental group showed higher levels of aggressiveness and emotional instability than the control group. In the post-test phase, aggressiveness and emotional instability decreased significantly in the experimental group (medium-high effect size), whilst aggressiveness and emotional instability increased in the control group. The effects of the program on the students are discussed further.

RESUMEN

En el marco de la escuela inclusiva, el aprendizaje socioemocional y personalizado fomenta la implicación del alumnado en la vida del aula y se relaciona con la disminución de la conducta desadaptativa. El objetivo de este estudio es analizar el impacto de un programa de educación socioemocional en la agresividad y la inestabilidad emocional en la infancia. Han participado 555 niños/as de 7 a 12 años ($M=9,2$ y $DT=1,5$), 55,5% niños y 45,5% niñas. Estudian Educación Primaria en seis colegios públicos del área metropolitana de Valencia (España). La muestra se ha distribuido en un grupo experimental (317 niños/as; 57,2% de la población total participante) y un grupo control (238 niños/as; 42,8% del total). El profesorado del grupo experimental recibió formación para implementar el programa en clase. El profesorado del grupo control no recibió formación ni aplicó el programa. Se analizan los resultados en la fase pretest y postest en ambos grupos. En la fase pretest, aparecen diferencias significativas entre los dos grupos: el grupo experimental muestra niveles más altos en agresividad e inestabilidad emocional que el grupo control. En la fase postest bajan significativamente la agresividad y la inestabilidad emocional en el grupo experimental, con un tamaño del efecto medio-alto; mientras que en el grupo control suben la agresividad y la inestabilidad emocional. Se discuten los efectos del programa en el alumnado.

KEYWORDS | PALABRAS CLAVE

Inclusion, social-emotional learning, aggressiveness, emotional instability, childhood, primary education. Inclusión, aprendizaje socioemocional, agresividad, inestabilidad emocional, infancia, Educación Primaria.

1. Introduction and state of the art

There is currently a debate over how to structure education under the principle of inclusiveness and non-exclusivity. This debate seeks to promote personalised education that embraces diversity, respects individuality, and seeks to bring out the cognitive and emotional capabilities of students. For this purpose, it is advisable to create learning processes aimed at fostering the capabilities of each and every student, placing the emphasis on the classroom (Harris, 2011). To this end, efforts are being made to promote conditions where everyone feels involved in learning and co-responsible for the development of their competencies to achieve transformational learning (Carrington & Selva, 2010). Likewise, knowledge of the learning ecology is necessary to encourage students' involvement by promoting autonomy and offering strategies to develop the self-regulation of learning (Coll, 2013; González-Sanmamed et al., 2018; Martínez-Rodríguez & Benítez-Corona, 2020). Thus, the aim is to configure the learning process by involving the processes and contexts that offer learning opportunities and help understand capabilities, needs, motivations, abilities and interests. Social-emotional learning is at the heart of inclusive approaches in basic education. It spans not only cognitive and intellectual aspects but also affective, social and moral elements to equip students with useful attitudes for life (UNESCO, 2013). Social-emotional education programmes work at the individual and group levels in the classroom environment. At the individual level, they increase social skills and assertive conflict resolution skills through direct instruction (Izard, 2002). At the group level, they create safe, affective learning environments through teacher training (Hawkins et al., 2004; Portnow et al., 2018).

Social-emotional education aims to offer students the necessary conditions for them to become engaged in their own teaching and learning process in a cohesive classroom environment. Thus, a learning-friendly classroom environment is the ideal place for children's integral development, where attention is paid to academic, emotional, and social development (De-Pedro et al., 2016). In this context, there is also a need to foster autonomy and communication. The empirical evidence shows that developing autonomy helps students participate in their own learning and become involved in the functional learning process (Díez-Gutiérrez & Díaz-Nafría, 2018). The empirical evidence also shows that the development of social-emotional skills improves the ability to communicate and reason about conflict, encouraging the search for satisfactory solutions to ensure peaceful coexistence (Aber et al., 2003).

A meta-analysis of 213 articles exploring social-emotional intervention programs confirms the improvements in participants' emotional and social skills and attitudes when compared with non-participants. These improvements include positive attitudes towards oneself, others and school in general, as well as fewer behavioural problems and better academic performance (Durlak et al., 2011). The understanding of one's own and others' emotions (Salisch et al., 2013) and the ability to regulate one's own behaviour develop rapidly at an early age (Eisenberg & Sulik, 2012). Therefore, childhood may be the ideal stage to implement these programs to prevent aggressive behaviours from getting engrained and becoming the common way of relating to others. Using aggressiveness as a way of relating to others may be linked to cognitive distortions that lead to the justification of this type of behaviour and to a belief in aggressiveness to maintain one's status within the group (Bandura, 1999).

1.1. Social-emotional learning and behaviour in childhood

Learning processes work through the involvement of physiological, cognitive and emotional mechanisms and the interactions between them as a result of the learning itself (Masten & Cicchetti, 2010). These knowledge transformations have cumulative effects on personal development (Masten et al., 2005) in a dynamic context that acts as a process of developmental change in children (Jones et al., 2010). Some competencies connect with others in the form of knowledge scaffolding, multiplying learning (Cicchetti & Gunnar, 2008) such that knowledge attracts knowledge. A school concerned with student involvement in the learning process tends to increase new learning and curb the development of disruptive and aggressive behaviours (Masten & Cicchetti, 2010). Accordingly, social-emotional learning has been positively linked to academic success (McCormack et al., 2014; Durlak et al., 2011) and the promotion of positive personal adjustment mechanisms (Weissberg et al., 2003). Social-emotional learning has also been negatively linked to aggressive behaviour (Lösel & Beelman, 2003; Wilson & Lipsey, 2007) and other behavioural problems,

such as school dropout, crime and substance use (Wilson et al., 2001). Aggressive behaviour is connected to a lack of emotional control (Eisenberg & Sulik, 2012).

Likewise, disciplinary problems in the educational environment and feelings of peer rejection or lack of acceptance negatively affect academic performance (Arens et al., 2015; Schenke et al., 2015). In both scenarios, negative learning situations arise for those who experience them. Aggression and violence can affect children's mental health and place children at risk of experiencing emotional adjustment problems in adolescence (Farrington, 2005). In addition, violent children display deficiencies of self-control and emotional instability (Berger, 2007; Mestre et al., 2010) and are more likely to be impulsive and to fail to show empathy for the victims of their aggression (Olweus, 1991). The close link between aggressiveness and emotional instability has been confirmed, such that these two variables reinforce one another and lead to personal and social vulnerability (Mestre et al., 2010; Palmén et al., 2011).

1.2. The elements and the programme of emotional learning

Social-emotional learning has positive effects on core executive functions such as planning and inhibitory control, which are characteristics of high cognitive ability, by creating calm, predictable classroom environments for students (Raver et al., 2011). This is linked to the regulation of the prefrontal areas of the cerebral cortex (Greenberg, 2006). Moreover, learning occurs through interactions with the ecological environment, so it must cover the ability to resolve conflicts and problems of coexistence through students' responsibility and autonomy. Thus, the teaching and learning process must cover the conceptual aspects that are typical of traditional learning, as well as emotional and motivational elements of students, in coordination with teachers. Schools must therefore adapt to the needs of students to create an inclusive environment aimed at responding to diversity and fostering education for all (Ainscow et al., 2006). To this end, it is important to establish communication channels amongst teachers, between teachers and students, and between families and the educational community. Students who perceive good relations at school tend to perform better (Cerdá et al., 2019).

From this perspective, a programme was designed for social-emotional intervention as a classroom resource consisting of 16 two-hour sessions (Mestre et al., 2011). The programme included interconnected cognitive, affective and behavioural competencies that are considered important for autonomy and success at school: i) emotional self-awareness (recognition of one's own and others' emotions, values, strengths, weaknesses, and self-esteem), ii) emotional self-control (emotional and behavioural regulation and relaxation), iii) communication and social skills (social skills, assertiveness, and expressing praise and complaints to establish healthy relationships), iv) social awareness (empathy and perspective-taking, prosocial behaviour, active listening, and listening to the feelings of others), and v) conflict resolution and decision making (analysing possible conflictive situations of classroom life and reaching responsible conclusions, decision making, agreements, and follow-up of agreements) (Taylor et al., 2017). The programme covers knowledge of one's own emotions and those of others, emotional self-control, personal autonomy, self-regulation and the ability to resolve conflicts in coexistence (Mestre et al., 2011). The programme was applied at school by teachers, who received 24 one-hour training sessions. Here, we present the effects of the programme on aggressiveness and emotional instability in childhood.

1.3. Aims and hypotheses

The aim of this study is to analyse the effects of a childhood emotional education programme (described in the previous section) and to observe the effects on students' aggressive behaviour and emotional instability (Kokko et al., 2006; Mestre et al., 2010). To this end, comparative analyses are carried out between the experimental and control groups. The following hypotheses are formulated:

1) We expect that, in doing the selection of the sample in the initial situation (pretest phase) significant differences do not appear between the experimental and control groups in the variables of aggressiveness and emotional instability. Therefore, we expect both groups to be in a similar situation in terms of their conflictive level at the start of the programme.

2) We expect the application of the programme to help reduce aggressiveness and emotional instability in childhood.

2. Materials and methods

2.1. Participants

Participants were 555 children (55.5% boys and 44.5% girls) aged 7 to 12 years ($M=9.2$ and $SD=1.5$). All were students of primary education. The age distribution was as follows: 7 years (11.8%), 8 years (20.9%), 9 years (16.6%), 10 years (21.5%), 11 years (19.3%) and 12 years (9.9%).

Most children were Spanish (85.3%). The other children were from Eastern Europe (5.8%), Arab countries (4.0%), Latin America (4.2%), Western Europe (0.5%) and Sub-Saharan Africa (0.2%).

With regard to family structure, most families were two-parent families (75%). The remaining 25% of students were from single-parent families due to separation or divorce (22%) or death (3%).

The sample was divided into two groups: an experimental group and a control group. The condition for being part of the experimental group was that the teachers agreed to carry out the emotional education programme and participate in the related training sessions prior to and during the project. The teachers had to implement the programme for all students in the class, so all the students in the classroom had to participate.

The experimental group consisted of 317 children aged 7 to 12 years (57.2% of participants; 31% boys and 26.2% girls). The mean age was 9.2 years ($SD = 1.6$). The age distribution was as follows: 7 years (6.8%), 8 years (14%), 9 years (9.1%), 10 years (10.5%), 11 years (10.7%) and 12 years (6.1%).

In relation to cultural and geographical origin, most were from Spanish families (47.5%). The remaining participants were from Eastern Europe (4%), Latin America (2.4%), Arab countries (2.6%), Western Europe (0.5%) and Sub-Saharan Africa (0.2%).

Regarding family structure, most participants were from two-parent families (44.5%), with 12.7% from single-parent families.

The control group consisted of 238 children (42.8% of the total sample). Of this percentage, 24.5% were boys and 18.3% were girls. Therefore, both groups had similar proportions of the analysed categories. The ages also ranged between 7 and 12 years ($M = 9.4$ and $SD = 1.4$). The age distribution was as follows: 7 years (5%), 8 years (6.9%), 9 years (7.5%), 10 years (11%), 11 years (8.6%) and 12 years (3.8%).

In terms of origin, 37.8% were from Spanish families, 1.8% from Eastern Europe, 1.8% from Latin America and 1.4% from Arab countries. Regarding family structure, 30.5% were from two-parent families, and 12.3% were from single-parent families.

2.2. Procedure

The programme was presented to public schools in the metropolitan area of Valencia (Spain) through the Valencian Centres for Training, Innovation and Educational Resources (CEFIREs). Implementation of the programme required teachers to work on the programme with their group of students. After this initial contact, teachers agreed to participate in six schools with similar characteristics: they offered primary education, were publicly run and were located on the outskirts of the city.

The project had four phases: a) training of teachers in the experimental group (10 hours before the programme and 14 one-hour training sessions to monitor the programme). The teachers of the control group received no training and followed the curriculum in the traditional way; b) before the programme, initial evaluation of the aggressiveness and emotional instability of students in the experimental and control groups was performed (pretest phase); c) the intervention phase of the programme for the experimental group; d) post-test phase for the experimental and control groups, using the same psychological constructs as in the pre-test phase.

Training for teachers in the experimental groups took place in the schools with the full group of teachers. The aim was to create a space for training and debate so that teachers would feel involved and would present the content of the activities with their student groups. Reflecting on teaching and sharing experiences in a friendly environment reassures teachers and has positive effects on teaching (Gómez-Zepeda et al., 2017). The involvement of teachers can have positive effects on reducing the aggressiveness and impulsiveness of student behaviour (Malti et al., 2011). The programme also received the support of the Valencian regional government and the consent of the families. The ethical standards

set by the APA were followed, respecting the voluntary nature of the study, confidentiality, and anonymity. The evaluation before and after the intervention programme took place in the classroom. The data were analysed using SPSS version 24.0.

2.3. Instruments

Physical and Verbal Aggression Scale (Caprara & Pastorelli, 1993; Spanish adaptation Del Barrio et al., 2001). This scale has 15 items aimed at evaluating behaviours related to hurting others, both physically and verbally. The response format consists of three alternatives (often, sometimes, never) to indicate the frequency of the behaviour described in each item. Example items: "I kick and punch" and "I badmouth my classmates". The reliability analysis shows that Cronbach's alpha is .85 for the total sample. Cronbach's alpha is .84 for the experimental group and .85 for the control group.

Emotional Instability Scale (Caprara & Pastorelli, 1993; Spanish adaptation Del Barrio et al., 2001). Items describe behaviour in relation to a lack of self-control in social situations as a result of the lack of ability to curb impulsiveness and emotionality. The scale has 15 items with three response alternatives (often, sometimes, never). Example items: "I'm in a bad mood" or "I interrupt others whilst they're talking". Cronbach's alpha is .80 for the total sample. Cronbach's alpha is .80 for the experimental group and .79 for the control group.

2.4. Data analysis

The Kolmogorov-Smirnov test of normality to determine the goodness-of-fit of two probability distributions to one another suggested that the analysis should be performed using non-parametric tests. Thus, the Mann-Whitney U test (1947) was carried out to test the equivalence of two groups (control and experimental), accompanied by analysis of effect size using Cliff's Delta (Cliff, 1993). The Wilcoxon sign test was also applied to related samples evaluated at two different times (pre-test – post-test), with the corresponding analysis of effect size using the PS_{dep} (Grissom & Kim, 2012). This analysis was performed for the whole participating population, differentiating between the control group and the experimental group to ascertain the initial conditions of the two groups, as well as the degree of similarity between them.

To this end, for the experimental group, the differences between two moments in time, before and after the intervention (pre-test and post-test phases), were analysed. The same was done for the control group (pre-test and post-test phases) to verify the results for the experimental group and the control group. The aim of this step was to analyse the effect of the intervention programme on aggressiveness and emotional instability in childhood.

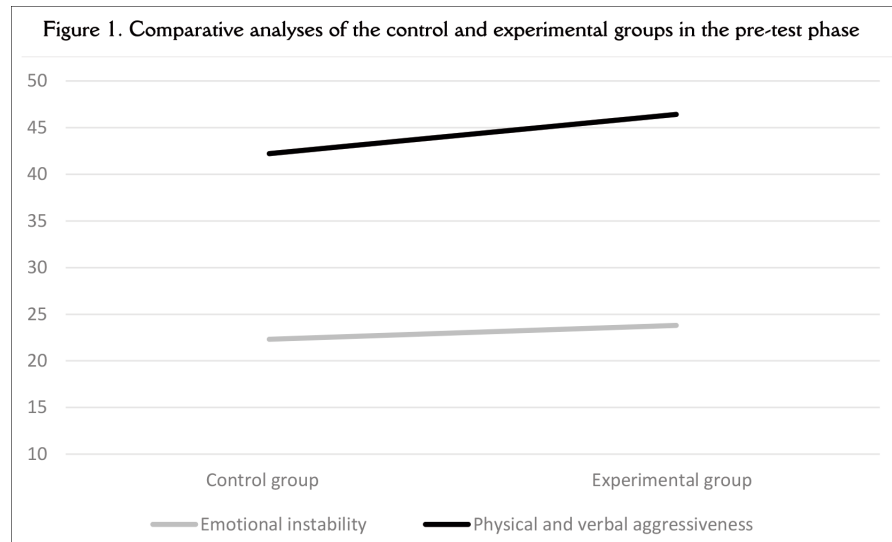
3. Results

First, the Mann-Whitney U test was performed to compare the scores for the control and experimental groups.

In the pre-test phase, the results indicate that there are significant differences in aggressiveness and emotional instability between the two groups. Specifically, the experimental group has higher scores of emotional instability and aggressiveness than the control group. In these cases, the effect size is small (Cliff's Delta: emotional instability=.151; physical and verbal aggressiveness=.227) (Table 1) (Cohen, 1988).

	Experimental group		Control group		Z	Bilateral asymptotic significance	Cliff's Delta
	M	SD	M	SD			
Emotional instability	23.8	5.4	22.3	4.5	-2.478	.013	.151
Physical and verbal aggressiveness	22.6	6.4	19.9	3.9	-3.716	.000	.227

It is observed that in the initial situation of both groups, there were significant differences in emotional instability and physical and verbal aggressiveness. However, the experimental group had higher scores of aggressiveness and emotional instability (Table 1; Figure 1).

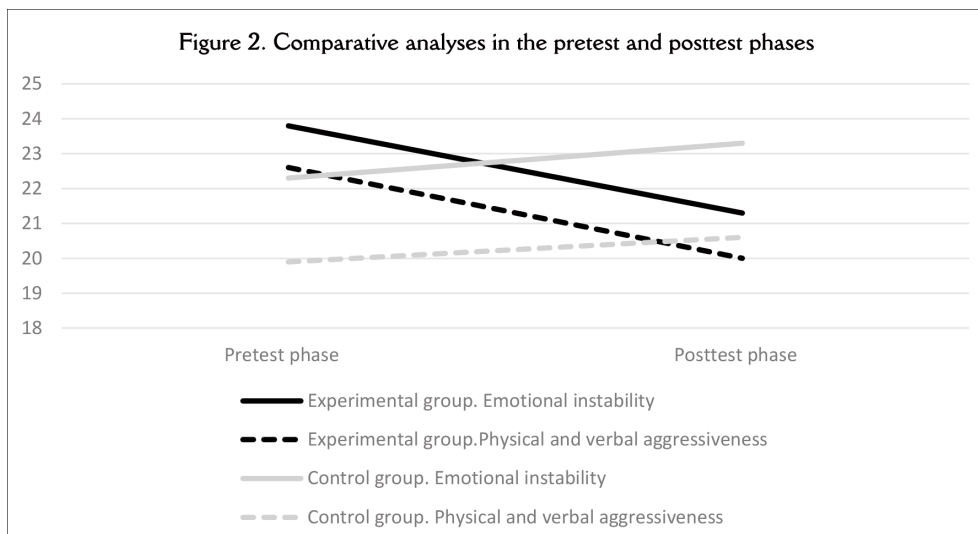


The results of the Wilcoxon signed-rank test (VWSRT) for the experimental group and the control group are now presented separately.

Table 2. Comparative analyses of the experimental group in the pre-test and post-test phases

	Pre-test phase		Post-test phase		Z	Bilateral asymptotic significance	PS _{dep} (Grissom & Kim)
	M	SD	M	SD			
Emotional instability	23.8	5.4	21.3	4.2	-9.069	.000	.626
Physical and verbal aggressiveness	22.6	6.4	20.0	4.2	-8.128	.000	.578

Table 2 shows the results for the experimental group in the pre-test and post-test phases. Significant differences between the pre-test and post-test scores may be observed for emotional instability and physical and verbal aggression. The results show that after the application of the programme, emotional instability and aggressiveness were significantly lower (Figure 2). The effect size according to the PS_{dep} test of Grisson and Kim is in the medium-to-large range (.626 and .578) (Cohen, 1988).



The situation is different for the control group. The results show that there are no significant differences between the pre-test and post-test phases in physical and verbal aggressiveness (Table 3; Figure 2). However, there are significant differences in emotional instability. The emotional instability scores reported by the children increased over time. That is, the scores in the post-test phase are higher (pre-test:

M=22.3 and SD=4.5; post-test: M=23.3 and SD=4.5; $p=.015$). In this case, the effect size is medium (Cohen, 1988).

Table 3. Comparative analyses of the control group in the pretest and posttest phases

	Pretest phase		Posttest phase		Z	Bilateral asymptotic significance	PS _{dep} (Grissom & Kim)
	M	SD	M	SD			
Emotional instability	22.3	4.5	23.3	4.5	-2.427	.015	.464
Physical and verbal aggressiveness	19.9	3.9	20.6	5.7	-.652	.514	--

4. Discussion and conclusions

The aim of this research is to analyse the impact of a classroom-based social-emotional education programme and its effects on aggressiveness and emotional instability in childhood. This social-emotional intervention programme aims at teaching emotional awareness (emotional knowledge, expression and self-regulation) and self-control, with an emphasis on responsibility, autonomy, self-concept and self-motivation, as well as empathy and moral values. The goal is to promote effective problem coping strategies to solve problems in a responsible and effective way.

In general, the results show the effectiveness of applying the programme, by confirming a decrease in the aggressiveness and emotional instability of the experimental group as a whole. Social-emotional learning is based on the knowledge of teachers about their students. This knowledge on the part of teachers lays the foundations to offer students personalised learning through reflection upon their own and others' emotions, self-regulation and self-control, providing understandable learning scenarios so that students can deal with them responsibly and autonomously. This helps achieve one of the indicators for global education monitoring –that of learning to be and learning to live together– through the education involving affective, social and moral factors, advocated by UNESCO (2013).

To form the control and experimental groups, similarity in terms of gender, age, level of studies and the conditions of the boys and girls was taken into account, although the class teacher had to agree to teach the programme for the class to be included in the experimental group. However, the initial situation (pre-test phase) of the experimental and control groups was not the same. As observed, the two groups had significant differences in aggressiveness and emotional instability in the pre-test phase. We face the paradox that the experimental group had higher rates of aggressiveness and emotional instability than the control group in the pre-test phase. Therefore, the first hypothesis, regarding similar conditions in the control and experimental groups, could not be fully tested. As shown in the Results section, the experimental group, as a whole, displayed higher scores in terms of aggressiveness and emotional instability.

However, after the implementation of the programme, both aggressiveness and emotional instability in the experimental group decreased significantly, and both variables increased slightly in the control group such that significant differences in emotional instability were observed. Thus, the second hypothesis, which posited a decrease in aggressiveness and emotional instability in the experimental group after the application of the programme, is confirmed. As shown, the emotional education programme contributed to achieving a significant decrease in aggressiveness and emotional instability in childhood. The two variables are closely related, as shown by previous research (Mestre et al., 2010; Palmen et al., 2011).

The results provide three conclusions. First, one of the strongest complaints amongst teachers concerns the high rates of aggressiveness amongst schoolchildren. This study shows that emotional education contributes to reducing aggressiveness, given that students are better prepared to use solution strategies that are distinct from mere aggression (Aber et al., 2003). An educational environment that is concerned with fostering the co-responsibility of students, promoting alternatives and skills to tackle the resolution of problems autonomously and responsibly, whilst respecting everybody's interests, provides a dynamic, non-aggressive environment with smooth communication and a concern for learning (González-Sanmamed et al., 2018).

Second, in line with previous research, we observe that aggressiveness and emotional instability are related to one another and feed off each other (Mestre et al., 2010; Palmen et al., 2011). Both variables induce personal vulnerability by being linked to social isolation and the inability to establish lasting positive relationships with peers (Palmen et al., 2011). The social-emotional education programme develops the

necessary emotional competencies aimed at building emotional awareness and self-control, as well as social awareness and responsible, autonomous conflict resolution, seeking the benefit of all (Taylor et al., 2017). These scenarios develop co-responsibility and the ability to deal with tasks autonomously.

Third, it is confirmed that concern for teacher training and the creation of a space for teachers to voice their concerns and speak about classroom conflicts creates a calm environment that has a bearing on individual well-being. Students who perceive smooth relationships between different teachers, as well as between teachers and other groups in the educational setting (e.g. the students and their families), are more likely to feel that they belong at school and to become involved in school and classroom life, which tends to improve their co-existence, as well as their performance (Cerdá et al., 2019).

In short, it may be concluded that education policies and teachers should be sensitive to applying social-emotional education programmes (Jones et al., 2010) and that education authorities should provide teachers with the means to implement these social-emotional education programmes in the formal educational environment.

This study has several limitations. The first limitation refers to the distribution of the control and experimental groups, which was based on the fact that the teachers accepted the implementation of the programme in the classroom, attended the training course and agreed to put it into practice in the classroom. This principle may be a limitation in itself because the teachers who are willing to be involved in the programme, may have different interests and motivations from the teachers in the control group. The teachers in the control group only participated in the evaluation of students in the pre-test and post-test phase. In the future, studies could be designed to distribute the experimental and control groups randomly. This could give a more complete picture of the scope of the intervention and the implementation of the programme with a perspective towards generalisation. A second limitation relates to the fact that the evaluation in the pre-test and post-test phases was based on self-reports. The children completed questionnaires that constituted the variables under analysis. It is plausible that the results could be strengthened by using several sources of information or longitudinal sources, which would have enabled analysis of different moments in the development of the same population.

In terms of future lines of research, in reference to the analyses that were conducted, which focused on groups of children, they could also be conducted with moderating variables, to help observe the subgroups that benefit most from the application of the programme. Seemingly, children who show the greatest aggressiveness at the beginning of the application of social-emotional programmes tend to benefit most from these interventions (Bierman et al., 2010).

With regard to the environment where the programme was implemented, the study was applied in the school context. In future research, this could be complemented by the family environment. The involvement of families in the process of schooling children in coordination with schools has positive effects on children's development. Although the involvement of teachers in programmes to reduce impulsiveness and aggressive behaviour seems to be more effective than that of families (Malti et al., 2011), it cannot be ignored that, together, families and teachers can enhance these effects.

Funding Agency

This study received support from the "Generalitat Valenciana" under the project "PROMETEO 2011/009" and from the "Universidad de Valencia" under the project "UV-INV-AE11-42278".

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