

Reliability and validity of the School Anxiety Inventory scores for Primary Education: a new
self-report

Abstract

Anxiety and school fears are relatively frequent and can affect 18% of children between 3 and 14 years old, according to international investigations (Canals et al., 2019). It is important for psychology and education professionals to have assessment instruments for screening for school anxiety in educational institutions. The main goal of this study was to develop and examined the reliability and validity of the School Anxiety Inventory for Primary Education (SAI-PE). Using a random cluster sampling, a sample of 843 Spanish students aged 8-12 years ($M = 10.03$, $SD = 1.25$) was selected from public and private schools. The content validity of the SAI-PE scores was analyzed through experts' judgment and the students' assessment of the items comprehension of this instrument. Exploratory and confirmatory factorial analyses support of the validity evidence of the SAI-PE scores. The results revealed a multifactorial structure both for the different anxiety reactions (cognitive, psychophysiological, and behavioral) and for the school situations (school punishment, victimization, social and academic evaluation). The study conclusions reinforce the importance of having instruments that assess the complexity of emotional responses such as school anxiety, favoring its early detection and the evaluation of the effectiveness of preventive and/or therapeutic programs.

Keywords: self-report; school anxiety; childhood; Primary Education; validation.

Introduction

School anxiety can be defined as a person's set of cognitive, behavioral, and psychophysiological reactions to school situations appraised as threatening, ambiguous, and/or dangerous, although objectively, they are not (García-Fernández et al., 2008). On the one hand, this definition is based on the postulates of Lang's (1968) three-dimensional theory, which establishes that any anxiety response is made up of a triple system of reactions (cognitive, physiological, and behavioral) that could function partially independently, although they also interact highly with each other (Cano-Vindel, 2003; Martínez-Monteagudo et al., 2012). On the other hand, the definition includes the premises of Endler's (1975) interactionist theory, which states that each person has a different emotional profile depending on the interaction between their personal characteristics and those of the situation in which they are immersed.

School anxiety and fears are relatively common in childhood (Canals et al., 2019). Specifically, school anxiety may occur in childhood with greater intensity, frequency, and duration prior to school changes, such as those derived from the expansion of Sars-Cov2 (Kamran & Naeim, 2021), transitions of the educational stage (Xu et al., 2021), or certain school events such as academic evaluation, social evaluation, failure, school punishment, or circumstances linked to peer aggression and/or victimization (García-Fernández et al., 2014; Gómez-Núñez et al., 2017; Ingles et al., 2015). Among the consequences of school anxiety are the likelihood of lower academic performance and difficulties in school well-being (Hossain et al., 2021; Shamionov et al., 2021), increased experiences of bullying and higher rates of aggressiveness (Delgado, García-Fernández et al., 2019; Torregrosa et al., 2020), somatic complaints (Jastrowski Mano, 2017), increase in school refusal (Gómez-Núñez et al., 2019; González et al., 2018; Tekin & Aydin, 2022), cognitive distortions (Abend et al., 2017), depressive symptoms (Alesi et al., 2014), and social anxiety (Delgado, Escortell Sánchez et al., 2019).

Therefore, it is important for educational psychologists, clinicians, and education professionals in general to have instruments that address the complexity of emotional responses such as school anxiety. These instruments would favor its early detection, as well as the evaluation of the effectiveness of preventive and/or therapeutic programs aimed at mitigating this maladaptive response in Spanish students of Primary Education.

The School Anxiety Inventory for Primary Education

The construction of the “School Anxiety Inventory for Primary Education” (SAI-PE) was primarily based on the “School Anxiety Inventory for Secondary Education-Short Version” (SAI-SV; García-Fernández & Ingles, 2017). The SAI-SV is composed of five cognitive responses, five physiological responses, and five motor responses, as well as fifteen situations. The exploratory and confirmatory factor analyses revealed the existence of three correlated situational factors (Aggression Anxiety, Social Evaluation Anxiety, and School Failure Anxiety), each comprising five items. Similarly, three dimensions related to anxiety responses (cognitive, psychophysiological, and motor) were found, each with five items.

Ingles et al. (2015) analyzed the factorial invariance of the SAI-SV by sex and age groups, confirming the factorial equivalence of this instrument as a function of these variables. The SAI-SV also showed adequate concurrent and divergent validity, with correlations ranging from low to moderate magnitude with other measures of social anxiety and interpersonal difficulties (García-Fernández & Ingles, 2017). Internal consistency coefficients ranged from .77 - .94, whereas test-retest reliability ranged from .74 - .87. The adequate psychometric properties of the SAI-SV scores have also been tested in subsequent adaptations of this instrument to clinical adolescent population (Gibler et al., 2022) and college students (Beckmann & Jawstroski Mano, 2023).

School anxiety is one of the main problems currently manifested in childhood (Popovych et al., 2022). However, the exhaustive review of the scientific literature shows the scarcity of

instruments evaluating child school anxiety adapted to the Spanish population and that consider the postulates of Lang's (1968) Tridimensional Theory and Endler's (1975) Interactionist Theory. The fusion of these models is one of the most exhaustive and accurate ways to evaluate and measure school anxiety (Martínez-Montegudo et al., 2012).

Therefore, the main purpose of this study was to develop and validate the School Anxiety Inventory for Primary Education (SAI-PE). This general goal is divided into the following specific goals: (a) to analyze the content validity of the SAI-PE through experts' judgment and assess the comprehension of the items in a small sample of students with characteristics very similar to those of the children recruited in the sample of this study; (b) to examine the test's factorial structure through exploratory (EFA) and confirmatory factor analysis (CFA), using the cross-validation procedure; (c) to determine the correlation coefficients between the various factors obtained; (d) to estimate the test's internal consistency indices.

Based on the empirical evidence, we expect that the SAI-PE scores: (a) will present a multifactorial structure for school situations, with statistically significant correlations between them; (b) will present a multifactorial structure for the assessed responses that, in turn, will be statistically correlated; (c) will have high internal consistency coefficients for the situational factors and the different school anxiety responses.

Method

Participants

In the present study, random cluster sampling was carried out in the province of Alicante. Two schools were randomly selected (i.e., one public and one private/concerted) for each geographical area of the province (i.e., north, south, east, west and center), resulting in a total of 10 centers. Subsequently, four classrooms were randomly selected for each of the 10 participating schools, which included an average of 22 students (one for each educational level examined, from 3rd to 6th grade of Primary Education).

The initial sample included 880 students, of whom 37 (4.20%) were excluded because they did not have their families' informed consent, due to errors or omissions in their responses, because they presented outlier data, and/or because they had significant difficulties in mastering the Spanish language.

Therefore, the final sample comprised 843 students (51.7% girls) from the second and third cycle of Primary Education (19.8% from 3rd, 19.8% from 4th, 27.9% from 5th, and 32.4% from 6th grade), aged between 8 and 12 years ($M = 10.03$, $SD = 1.25$).

Instruments

School Anxiety Inventory for Primary Education (SAI-PE). It was designed for students from 8 to 12 years and composed of 34 items in its final version: 19 referring to school situations that can cause anxiety (school punishment = 5 items; victimization = 5 items; social evaluation = 5 items; school evaluation = 4 items), and 15 items that present the different school anxiety responses (5 cognitive, 5 psychophysiological, and 4 motor responses). The psychometric properties of SAI-PE are analyzed in this study.

Procedure

Following the ethical standards of scientific research, first, an interview was conducted with the management teams of the participating schools to explain the purposes of the research, the evaluation instruments, and request their authorization and collaboration. After obtaining authorization, we sent a letter to the families, explaining the study and requesting their written informed consent to authorize their children's participation in the research.

Subsequently, the instrument was administered voluntarily, anonymously, and collectively in the classroom in the presence of one of the researchers and with the support of the school counselors and the group tutors. Before completing the inventory, the students were instructed to fill in the identification data (i.e., sex, age, grade, and school code), and the instructions were read aloud. After completing the questionnaire, we thanked the groups and

the educational teams for their participation in the project, ensuring the descriptive return of the results to the educational counselor of each participating school after the research was completed.

Data analysis

When planning the statistical analyses, we considered the model and recommendations of previous research to evaluate a new test (Schmitt, 2011). To determine sample size adequacy for conducting EFA, we used Bartlett's sphericity test and the Kaiser-Meyer-Olkin (KMO) coefficient. To analyze the internal structure of the SAI-PE, we conducted a cross-validation procedure. Thus, the total sample was randomly divided into two subsamples. EFAs were performed with the first subsample ($n = 386$), and CFAs were performed with the second subsample ($n = 457$), as recommended by Ferrando-Piera et al. (2022).

Four iterated principal axes (PAFs) were performed with oblimin rotation for anxiety situations and responses, as we assume a relationship between these dimensions. The number of factors was determined according to Kaiser's criterion (selecting factors with an eigenvalue equal to or greater than one), following the recommendations of Hair et al. (1998/2008). The items included had factor loadings greater than or equal to .30 (Gorsuch, 1983).

Four CFAs were performed to test the models obtained in the EFAs: one for school situations and three for the different school anxiety responses, applying the maximum likelihood (ML) estimation method. For this purpose, univariate and multivariate normality were examined, as well as the residual dispersion plots. Multivariate kurtosis was analyzed through the Mardia coefficient, obtaining indices ranging between 12.87 and 129.58 for the different scales of the SAI-PE. These coefficients indicated that the sample of this study did not meet the assumptions of normality in the distribution of frequencies so, following the recommendations of Finney and DiStefano (2006) and Bentler (2005), we evaluated the fit of the proposed models taking into account the chi-square (χ^2) statistic and the following

goodness-of-fit indices (Hu & Bentler, 1999): the robust comparative goodness-of-fit index (R-CFI), the Tucker-Lewis index (TLI), the normed fit index (NFI), the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), and the robust standardized root mean square residual (R-RMSEA).

To calculate the correlations between the different factors of the SAI-PE, we calculated Pearson's product-moment correlation coefficients, describing their effect sizes according to Cohen (1988). Based on the interpretations of the Cronbach alpha coefficients proposed by George and Mallery (2003) and Ponterotto and Ruckdeschel (2007), we calculated the internal consistency of the scores of the SAI-PE factors (situations, responses, and total score).

All statistical analyses were performed using the SPSS statistical packages, version 23.0, and EQS 6.1.

Results

SAI-PE refinement

The SAI-PE, initially composed of 70 items, divided into 32 school situations and 38 responses (18 cognitive, 8 psychophysiological, and 12 behavioral), was evaluated according to the criteria of ten judges (50% women), five specialists in educational and clinical psychology for children and adolescents and five educational counselors (psychologists and educational psychologists) with an average experience of 8.2 years. Individually, the experts determined the degree of adequacy of each of the instrument's items using a 5-point Likert scale (0 = *Irrelevant*; 4 = *Very relevant*). To maintain a situation or response from the initial set, we established as a criterion that at least eight of the judges had to rate it as *quite* or *very relevant* (Cohen's Kappa coefficient $\geq .80$). The items that did not reach the agreement according to the experts' judgments were eliminated. Thus, the SAI-PE was composed of 33 items distributed in 23 school situations and 10 anxiety responses (3 cognitive, 3 psychophysiological, and 4 behavioral). All items related to anticipatory anxiety (e.g., *On the way to school*), which were

included in this analyzed version, were eliminated due to their low factorial loads. Subsequently, and according to the criteria of the expert judges, some of the statements of the school situations were modified (e.g., *If they punish me at school* became *If the teacher punishes me*) and some new items were added to the responses to increase the inventory's content validity (e.g., *I can't sit still, I ruminate about it, I think about it*).

After analyzing face and content validity according to the judges' criteria and the consequent refinement or elimination of items, the SAI-PE was administered to a small sample, independent of the main sample of this study, although with similar characteristics. This sample comprised 309 primary school students aged between 8 and 12 years ($M = 9.96$, $SD = 1.30$). The sample was selected with non-probability convenience sampling of three public schools in the provinces of Albacete. To increase the face and content validity of the SAI-PE, we presented the instrument's items and asked the children, "*Do you understand what this question means?*" The children responded *yes* or *no*. Of them, 98.6% responded *yes*, supporting the experts' judgment, so the wording of the SAI-PE items was not modified.

Finally, the SAI-PE consisted of 37 items corresponding to 22 school situations and 15 school anxiety responses.

Exploratory factor analysis of the school situations

The Kaiser-Meyer-Olkin sample adequacy test ($KMO = .92$) and Bartlett's sphericity test ($\chi^2 = 11279.75$, $df = 171$, $p < .001$) showed satisfactory values. The factorial solution was composed of 19 items grouped into four factors referring to anxiogenic school situations with an eigenvalue greater than one, which explained 61.85% of the total variance (see Appendix A for a review of school situations). Factor I, School Punishment Anxiety ($\lambda = 3.13$), is related to anxiety shown in situations of explicit punishment at school or that could lead to punishment, such as "*If the teacher asks me for homework and I have not done it*" or "*If the teacher says he/she is going to call my parents to come to school*". This factor has 5 items that explain

16.48% of the variance. The factor loadings ranged between .67 and .78 ($M = .72$). Factor II, Victimization Anxiety ($\lambda = 3.10$), reflects the anxiety caused by situations in which a person feels physically or psychologically assaulted by peers, for example, “*If I am insulted or threatened at school*” or “*If I am in the middle of a fight*”. This factor presents 5 items that explain 16.32% of the variance. The factor loadings ranged between .65 and .76 ($M = .72$). Factor III, Social Evaluation Anxiety ($\lambda = 2.85$), refers to the anxiety felt when expecting to be judged negatively by others at school, for example, “*Go to the blackboard*” or “*If the teacher asks me something in front of the class*”. This factor comprises 5 items that explain 15.02% of the variance. The factor loadings ranged between .55 and .75 ($M = .69$). Factor IV, School Assessment Anxiety ($\lambda = 2.66$), included 5 items related to anxiety associated with test situations, such as “*A few moments before taking an exam*” or “*When I’m taking an exam*”. This factor explained 14.01% of the variance. The factor loadings ranged between .62 and .83 ($M = .75$).

Exploratory Factor Analysis of Cognitive Responses to School Anxiety

Adequate indices were found in the Kaiser-Meyer-Olkin (KMO = .74) sample adequacy test and the Bartlett sphericity test ($\chi^2 = 959.75$, $df = 10$, $p < .001$). A factor with an eigenvalue greater than one ($\lambda = 1.76$) was found, which explained 35.15% of the variance (see Appendix A for a review of cognitive reactions). This single factor, comprising 5 items, refers to the cognitive symptoms of school anxiety, including reactions such as: “*I ruminate about it, I think about it*” or “*I feel guilty*”. The factor loadings ranged between .41 and .75 ($M = .58$).

Exploratory Factor Analysis of Behavioral Responses to School Anxiety

The Kaiser-Meyer-Olkin sample adequacy test (KMO = .72) and Bartlett sphericity test ($\chi^2 = 839.06$, $df = 6$, $p < .001$) presented adequate values. The factorial solution consisted of one factor with an eigenvalue greater than one ($\lambda = 1.67$) that explained 41.75% of the variance (see Appendix A for a review of behavioral reactions). Only one of the five items included after the

initial inventory refinement was removed (“*I get blocked, I don’t know what to do*”), because it did not reach the minimum required factor load of .30. Therefore, this factor was finally made up of 4 items associated with motor or observable manifestations of school anxiety, such as “*I cannot find the words*” or “*I cannot sit still*”. The factor loadings ranged between .49 and .82 ($M = .64$).

Exploratory Factor Analysis of Psychophysiological Responses to School Anxiety

The Kaiser-Meyer-Olkin sample adequacy index ($KMO = .77$) and Bartlett sphericity test ($\chi^2 = 1087.54$, $df = 10$, $p < .001$) showed adequate values. One factor with an eigenvalue greater than one ($\lambda = 1.67$) was found, which explained 41.75% of the variance (see Appendix A for a review of psychophysiological reactions). This factor contained 5 items, which reflected the most involuntary anxious responses; that is, those caused by the Autonomic Nervous System (ANS) and the Somatic Nervous System (SNS), such as “*My head hurts*” or “*I breathe faster*”. The factor loadings ranged between .45 and .76 ($M = .61$).

Confirmatory factor analysis of school situations

The factorial structure was analyzed through four CFAs, evaluating the fit of four different models: (M0) a model without factors, (M1) a one-factor model, (M2) a model with four uncorrelated factors, and (M3) a model with four correlated factors. The results of the CFA revealed a significant chi-square statistic for all the proposed models, indicating their poor fit. However, according to the goodness-of-fit indices, the model that best fit the data was the model with four correlated factors (M3; $\chi^2 = 678.64$, $p < .001$; GFI = .93, AGFI = .91, R-RMSEA = .06, NFI = .94, TLI = .94, R-CFI = .95), showing a significant improvement over the one-factor (M1; $\chi^2 = 4705.23$, $p < .001$) and the model with four uncorrelated factors (M2; $\chi^2 = 1663.27$, $p < .001$; Figure 1).

[INSERT FIGURE 1 ABOUT HERE]

Confirmatory Factor Analysis of Cognitive Responses to School Anxiety

The factorial structure was also analyzed through three CFAs, evaluating the fit of three different models: (M0) a model without factors, (M1) a one-factor model, and (M2) a model with one factor, correlating Items 1 and 3, and Items 4 and 5. The results of the CFA showed a significant chi-square statistic for all the proposed models ($p < .001$), indicating their poor fit. However, after examining the goodness-of-fit indices, the model that best fit the data was the one-factor model that correlated Items 1 and 3, and Items 4 and 5 (M2; $\chi^2 = 16.33, p < .001$). Although the one-factor model (M1; $\chi^2 = 80.78, p < .001$) also fit the criteria established for the proposed indices (except for the R-RMSEA index, which was greater than .08), M2 represented a significant improvement over M1 and the null model or model without factors (M0; $\chi^2 = 962.16, p < .001$; GFI = .99, AGFI = .97, R-RMSEA = .07, NFI = .98, TLI = .95, R-CFI = .99) (see Figure 2).

[INSERT FIGURE 2 ABOUT HERE]

Confirmatory Factor Analysis of Behavioral Responses to School Anxiety

The factorial structure was also analyzed through two CFAs to evaluate the fit of two different models: (M0) a model without factors, and (M1) a one-factor model. According to the results of the CFA, the chi-square statistic was significant for all the proposed models ($p < .001$), indicating their poor fit. However, according to the goodness-of-fit indices, the one-factor model fit the data optimally (M1; $\chi^2 = 13.56, p < .001$; GFI = .99, AGFI = .97, R-RMSEA = .07, NFI = .98, TLI = .95, R-CFI = .99) (see Figure 3).

[INSERT FIGURE 3 ABOUT HERE]

Confirmatory factor analysis of the Psychophysiological Responses to School Anxiety

The factorial structure was analyzed through two CFAs to evaluate two types of models: (M0) a model without factors, and (M1) a one-factor model. The results of the CFA showed that the chi-square statistic was significant for all the proposed models ($p < .001$), indicating their poor

fit. However, according to the goodness-of-fit indices, the model that best fit the data was the model with one factor (M1) ($\chi^2 = 40.25$, $p < .001$; GFI = .98, AGFI = .95, R-RMSEA = .07, NFI = .96, TLI = .94, R-CFI = .97), showing a significant improvement over the null or no-factor model (M0) ($\chi^2 = 1090.26$, $p < .001$) (see Figure 4).

[INSERT FIGURE 4 ABOUT HERE]

Correlation coefficients between different situational factors, anxiety responses, and the total score of the SAI-PE

All correlations between the different factors were positive and statistically significant, ranging from moderate ($r = .35$) to high ($r = .55$) magnitude (see Table 1). The correlation between the SAI-PE factors and the total SAI-PE score was high, ranging from .67 (with the Social Evaluation Anxiety factor) to .86 (with the School Punishment Anxiety factor).

[INSERT TABLE 1 ABOUT HERE]

In addition, the correlations between the different scales of school anxiety responses were positive and statistically significant ($p < .001$), all of them with a high magnitude ($r > .50$). These correlation coefficients (Pearson's r) were: $r = .70$ between the Cognitive Anxiety scale and the Motor Anxiety scale; $r = .77$ between the Motor Anxiety scale and the Psychophysiological Anxiety scale; and $r = .79$ between the Cognitive Anxiety and Psychophysiological Anxiety scales.

Internal consistency of situational factors, responses and total SAI-PE score

The internal consistency coefficients (Cronbach alpha) were $\alpha = .92$ for the SAI-PE, $\alpha = .90$ for Factor I (School Punishment Anxiety), $\alpha = .88$ for Factor II (Victimization Anxiety), $\alpha = .85$ for Factor III (Social Assessment Anxiety), and $\alpha = .89$ for Factor IV (School Evaluation Anxiety). All indices ranged from good ($\alpha = .80 - .90$) to excellent ($\alpha > .90$) magnitude.

In addition, the internal consistency coefficients (Cronbach alpha) for the different scales of responses of the SAI-PE were: $\alpha = .80$ for the Cognitive Anxiety scale, $\alpha = .80$ for the Motor Anxiety scale, and $\alpha = .84$ for the Psychophysiological Anxiety scale. All indices had a high magnitude ($\alpha = .80$ and $.90$).

Disussion

The results of the present study can motivate educational and clinical psychologists and education professionals to use a self-report measure that comprehensively assesses anxiety responses in the school setting. This study is an important, albeit initial, step in the study of childhood anxiety.

From the results obtained, we can state that the first hypothesis is confirmed, as the SAI-PE presented a multidimensional structure comprising four correlated situational factors: School Punishment Anxiety, Victimization Anxiety, Social Evaluation Anxiety, and School Evaluation Anxiety. These findings are consistent with the SAI-SV, the instrument from which this new inventory was derived (García-Fernández & Ingles, 2017; Ingles et al., 2015) and with other adaptations (Beckmann & Jawstroski Mano, 2023; Gibler et al., 2022).

The correlation between the different situational factors was high, indicating that, although each dimension measured a specific type of anxious response depending on the school situation, the inventory evaluated different aspects of the same emotional response. Thus, the importance of assessing the school situation that provokes anxiety is confirmed, as established in the postulates derived from Endler's (1975) interactionist theory.

The second hypothesis was also confirmed because the SAI-PE presented a multifactorial structure for the evaluated responses (cognitive, psychophysiological, and behavioral), thereby following the postulates established by Lang's (1968) three-dimensional theory of anxiety responses. Similarly, these results coincided with the structure presented by the SAI-SV (García-Fernández & Ingles, 2017; Ingles et al., 2015). In addition, the three anxious reactions

presented statistically significant correlations of high magnitude, showing a strong relationship between them. This indicates that, although they function in a partially differentiated way, some reactions can influence the onset or increase of others (Cano-Vindel, 2003; Martínez-Monteagudo et al., 2012).

The third hypothesis was also confirmed because, according to the classification established by various authors (George & Mallery, 2003; Ponterotto & Ruckdeschel, 2007), the four situational factors presented satisfactory internal consistency coefficients, varying between good and excellent magnitude. Likewise, adequate internal consistency indices were obtained for each dimension related to the triple response system (cognitive, psychophysiological, and motor). These data are similar to those found in the SAI-SV factors (García-Fernández & Ingles, 2017; García-Fernández et al., 2014; Ingles et al., 2015), which represent the primary model followed for the construction of the SAI-PE.

Limitations and future directions

We should consider a series of limitations in the findings with a view to future research on this topic. Firstly, the SAI-PE is validated for children aged 8 to 12 years, so the results cannot be generalized to students of the first cycle of Primary Education (6-7 years) or to others who have different characteristics from those of the sample of this study (e.g., Spanish child clinical population). Therefore, the factorial invariance of the SAI-PE should be analyzed by sex and age groups to ensure that the semantic meaning of the items that make up this test is similar in these groups. This would prevent possible artificial differences due to the measurement error of this instrument, obtaining the normative data or scales by sex and age. In addition, the study of the psychometric properties of the inventory in clinical samples would allow obtaining clinical cut-off points for each of the dimensions of this tool.

Finally, future research should examine the temporal stability or test-retest reliability of the scores of each of the SAI-PE scales, as well as deepen the analysis of their construct validity, examining their relationship with other variables (e.g., school rejection, social anxiety, etc.), and criteria such as primary school students' academic performance.

Conclusion

School anxiety has emerged as one of the most frequent problems in school contexts after the recent periods of confinement derived from the expansion of SarsCov-2 (Kamran & Naeim, 2021; Popovych et al., 2022). However, this emotional response should be fully evaluated before planning any intervention. To date, the Spanish child population did not have any specific instrument to evaluate school anxiety reactions and the situations that provoke it. However, the adequate psychometric properties of the SAI-PE scores, its simplicity, and its ease of administration, scoring, and interpretation make it a useful tool that is simple to administer collectively in schools. This would allow education and clinical professionals to evaluate the effectiveness of preventive and therapeutic programs to reduce or mitigate students' high anxiety levels, considering both the pattern of reactivity presented (cognitive, behavioral, or psychophysiological) and the specific school situation that provokes it.

In this line, preventive and therapeutic programs aimed at the management of anxiety, school rejection (Estévez-López et al., 2009; González et al., 2018; Mateu-Martínez et al., 2013; Scaini et al., 2022), and social skills programs in childhood and adolescence (Ingles, 2011; Ugarte-Paz et al., 2021) have shown the importance of teaching and acquiring social skills (Huber et al., 2019; Sklad et al., 2012) and strategies for emotion self-regulation or anxiety reduction (Gallegos et al., 2012) as of early childhood. This would enhance the academic adaptation and personal well-being of Spanish children in Primary Education.

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Appendix A. Inventory of School Anxiety for Primary Education.

Surname and first name..... Age.....

Sex: Boy Girl Country of birth:.....

Course.....

On the following pages, you will find a series of phrases that describe situations you may encounter at school.

Your task is to assess from 0 to 4 how often the responses to these situations happen to you, as follows:

0: Never

1: Rarely

2: Sometimes yes and sometimes no

3: Very often

4: Always

Here is an example to make your task much easier:

If my best friend is very sad

1. I sit next to him/her in silence.	0	1	2	3	4
2. I ask him/her what's wrong with him/her.	0	1	2	3	4
3. I do silly things to make him/her laugh.	0	1	2	3	4

What should you do? It is very simple, and we will explain it to you below. Follow the steps of the stars:

1. Read the first sentence.
2. Choose the most appropriate score for you and cross it out (0, 1, 2, 3, 4). Do the same with phrase number two.

NOW, TURN THIS PAGE AND ANSWER ALL THE BOXES LIKE WE EXPLAINED

0: NEVER	1: RARELY	2: SOMETIMES YES AND SOMETIMES NO	3: VERY OFTEN	4: ALWAYS
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Going to the blackboard

1. I think they will laugh at me.	0	1	2	3	4
2. I blush.	0	1	2	3	4
3. My voice is shaky.	0	1	2	3	4

Reading aloud in class

4. I think they will laugh at me.	0	1	2	3	4
5. I blush.	0	1	2	3	4
6. My voice is shaky.	0	1	2	3	4

If the teacher asks me in front of the class

7. I think they will laugh at me.	0	1	2	3	4
8. I blush.	0	1	2	3	4
9. I get blocked and remember only a few things.	0	1	2	3	4

If I have to explain a class assignment

10. I think they will laugh at me.	0	1	2	3	4
11. I blush.	0	1	2	3	4
12. My voice is shaky.	0	1	2	3	4

If I have to ask the teacher something

13. I ruminate about it, I think about it.	0	1	2	3	4
14. I blush.	0	1	2	3	4
15. My voice is shaky.	0	1	2	3	4

The night before the exam

16. I'm worried.	0	1	2	3	4
17. My stomach feels uncomfortable.	0	1	2	3	4
18. I get blocked and remember only a few things.	0	1	2	3	4

Moments before taking an exam

19. I'm worried.	0	1	2	3	4
20. My stomach feels uncomfortable.	0	1	2	3	4
21. I get blocked and remember only a few things.	0	1	2	3	4

When I'm taking an exam

22. I'm worried.	0	1	2	3	4
23. My stomach feels uncomfortable.	0	1	2	3	4
24. I get blocked and remember only a few things.	0	1	2	3	4

When I'm going to get an exam grade

25. I'm worried.	0	1	2	3	4
26. My stomach feels uncomfortable.	0	1	2	3	4
27. I can't sit still.	0	1	2	3	4

0: NEVER	1: RARELY	2: SOMETIMES YES AND SOMETIMES NO	3: VERY OFTEN	4: ALWAYS
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If I haven't done my homework

28. I feel guilty.	0	1	2	3	4
29. My head hurts.	0	1	2	3	4
30. I can't sit still.	0	1	2	3	4

If the teacher asks me for my homework and I haven't done it

31. I feel guilty.	0	1	2	3	4
32. I breathe faster.	0	1	2	3	4
33. I cannot find the words.	0	1	2	3	4

If the teacher says he/she is going to call my parents to school

34. It scares me, it overwhelms me.	0	1	2	3	4
35. My heart beats very fast.	0	1	2	3	4
36. I get blocked and remember only a few things.	0	1	2	3	4

If the teacher scolds me or rebukes me

37. I ruminate about it, I think about it.	0	1	2	3	4
38. I breathe faster.	0	1	2	3	4
39. I cannot find the words	0	1	2	3	4

If the teacher punishes me

40. I ruminate about it, I think about it.	0	1	2	3	4
41. I breathe faster.	0	1	2	3	4
42. I cannot find the words	0	1	2	3	4

If I am insulted or threatened at school

43. It scares me, it overwhelms me.	0	1	2	3	4
44. My heart beats very fast.	0	1	2	3	4
45. I get blocked and remember only a few things.	0	1	2	3	4

If they laugh at me at school

46. It scares me, it overwhelms me.	0	1	2	3	4
47. My heart beats very fast.	0	1	2	3	4
48. I get blocked and remember only a few things.	0	1	2	3	4

If a classmate yells at me at school

49. It scares me, it overwhelms me.	0	1	2	3	4
50. My heart beats very fast.	0	1	2	3	4
51. I get blocked and remember only a few things.	0	1	2	3	4

If a classmate tries to force me to do things I don't want to

52. It scares me, it overwhelms me.	0	1	2	3	4
53. My heart beats very fast.	0	1	2	3	4
54. I get blocked and remember only a few things.	0	1	2	3	4

If I'm in the middle of a fight

55. It scares me, it overwhelms me.	0	1	2	3	4
56. My heart beats very fast.	0	1	2	3	4
57. I get blocked and remember only a few things.	0	1	2	3	4