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Revised Inventory of Supporting for Socio-emotional Skills: internal structure and acquiescence control

Inventário de Suporte às Habilidades Socioemocionais versão revisada: estrutura interna e controle de aquiescência

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Abstract

The study aimed to revise the Inventory of Supporting Socio-emotional Skills - Revised and explore models of internal structure controlling for acquiescence bias. The instrument assesses students' perceptions of socioemotional support provided by their teachers. The sample consisted of Brazilian students ($N = 232$) who responded to the Supporting Socio-emotional Skills with 72 items. Based on preliminary analyses, the 20 items with the best psychometric performance were selected. The four-factor model revealed that acquiescence accounted for 6.6% of the total variance. High correlations among the factors and low discriminant validity led us to choose the bifactor model to structure the scale. This model exhibited the best fit, and the data explained item behavior better through a general factor. The reduced version of the Supporting Socio-emotional Skills showed adequate psychometric properties and aligns with the original scale, advancing the understanding of the construct.

Keywords: Educational measurement; Psychological assessment; Psychometric; Socioemotional skills.

Resumo

O estudo analisou modelos de estrutura interna e controle de aquiescência para a versão revisada do Inventário de Suporte às Habilidades Socioemocionais – versão revisada. O instrumento de heterorrelato avalia a percepção de estudantes sobre o suporte socioemocional dado pelo docente. A amostra foi composta por estudantes brasileiros ($N = 232$) que responderam a com 72 itens. A partir das análises preliminares, foram selecionados os 20 melhores itens. O modelo de quatro fatores apresentou 6,6% da variância total devido à aquiescência. As altas correlações entre os fatores e a baixa validade discriminante impulsionaram os autores a testarem um modelo bifactor. Esse modelo apresentou os melhores ajustes e os dados explicam melhor o comportamento

dos itens a partir de um fator geral. A versão reduzida do Inventário de Suporte às Habilidades Socioemocional apresentou propriedades psicométricas adequadas e corrobora com a versão original da escala trazendo avanços na compreensão do construto.

Palavras-chave: Avaliação Educacional; Avaliação Psicológica; Psicometria; Habilidades socioemocionais.

The world has been increasingly demanding the adaptation of children, adolescents, and adults to new challenges. This scenario requires not only cognitive and technical competencies but also interpersonal and emotional characteristics that assist individuals in adapting to rapid and emerging changes (Pancorbo et al., 2020; Scheirlinckx et al., 2023). In this context, socioemotional skills emerge as important attributes for the development and maintenance of students in school, as well as predictors of academic and personal success (Crispim et al., 2023; Danner et al., 2021; Walton et al., 2022). The teacher and schools, in turn, play a crucial role in supporting the development of these characteristics (Marques et al., 2019). In this still emerging scenario, how can teachers assist in the development of social-emotional skills? Furthermore, how can one assess the teachers' support for socioemotional development? Therefore, this study aims to present the revised version of a scale that assesses students' perceptions of the socioemotional support they receive from their teachers.

Socioemotional skills, also referred to as 21st-century skills, character skills, or personal skills, stem from biological predispositions and environmental factors manifested in patterns of thoughts, feelings, and behaviors (Organização de Cooperação e de Desenvolvimento Econômico, 2019; Sette & Alves, 2021). Socioemotional skills are intra- and interpersonal characteristics that aid in the emotional development of individuals and can be formally developed through Social and Emotional Learning (SEL) programs and informally through unique life experiences and interactions (Barbosa & Melo-Silva, 2023; Kankaraš & Suárez-Álvarez, 2019).

In the national context, socioemotional skills are part of the Brazilian curriculum guidelines, with their inclusion in the *Base Nacional Comum Curricular* (National Common Curricular Base) aimed at the holistic education of students, encompassing both technical and emotional competencies in ten areas, namely: knowledge; scientific, critical, and creative thinking; cultural repertoire; communication; digital culture; work and life project; argumentation; self-awareness and self-care; empathy and cooperation; responsibility, and citizenship (Ministério da Educação, 2018). Therefore, understanding the reality of Brazilian students through instruments that assess socioemotional development is a way to enhance new public policies (Primi, Santos, De Fruyt, Hauck-Filho et al., 2019).

When assessing the level of socioemotional skills, the Social and Emotional or Non-cognitive Nationwide Assessment instrument (SENNA) (Abrahams et al., 2019; Primi et al., 2021) stands out. It was inspired by the Five-Factor Model of personality and evaluates the level of socioemotional skills from a dimensional perspective. These characteristics are understood across five dimensions or macro-competencies (self-management; engagement with others; kindness; openness to the new; and emotional resilience), which are further divided into seventeen facets or competencies (Pancorbo et al., 2020; Primi et al., 2021).

Some Brazilian studies, however, have pointed to other aspects of student development. These include the understanding of social skills, which are context- or culture-specific behaviors expected of an individual; that is, they are situational in nature (Vieira-Santos et al., 2018); the use of active methodologies and the pedagogical-didactic role of the teacher (Pischetola & Miranda, 2019; Paiva et al., 2017); and the quality of the school climate (Cunha et al., 2019; Moro et al., 2019).

The assessment of teachers' relational and pedagogical behaviors among university students has been conducted using the Teacher Behavior Scale (Henklain et al., 2020). Teachers' perceptions regarding their cognitive, emotional, institutional, pedagogical, and social dimensions in the teaching and learning process have been evaluated through the Brazilian Teaching Engagement Scale (Nascimento & Padilha, 2022). Additionally, the perception of teachers and their relationship with students in terms of affinity and conflict has been assessed using the Teacher-Student Relationship Scale (Petrucchi et al., 2014).

The study by Batista et al. (2016) investigates the teacher-student relationship and seeks to capture the teacher's general style of classroom management through the Teacher Leadership Styles Inventory. This instrument is based on the literature on parenting styles applied to teachers, who are evaluated across the dimensions of "responsiveness", "demandingness", and "coercive control". The Educational Social Skills Inventory, in turn, assesses teachers' social behaviors, with items divided into the dimensions of "learning/development mediation", "inductive discipline", and "socioemotional support" (Del Prette et al., 2024). However, despite the relevance of these and other tools, no instruments were found in the literature that assess the teacher-student relationship from the perspective of socioemotional support as perceived by the student in relation to their teacher. Furthermore, although the literature reports studies on the characteristics and levels of students' socioemotional development (Cavioni et al., 2024; Primi et al., 2021), research involving instruments that measure the level of support provided by the teacher for the development of such characteristics remains scarce. In this regard, only the Inventory of Supporting for Social-Emotional Skills (ISSe) (Valentini et al., 2020; Valentini et al., 2024), developed through this and previous studies, has been identified.

The construction of ISSe items was inspired by the amalgamation of three models, namely: the dimensions of the SENNA instrument (Primi et al., 2021), the technical-didactic model of Marchezine-Cunha and Tourinho (2010), and the parenting styles model by Darling and Steinberg (1993). The Marchezine-Cunha and Tourinho (2010) model classifies the teachers' teaching style into three dimensions that range from a more aggressive stance, which caters solely to the teachers' needs, to a more passive stance that caters only to the students' needs, and an assertive style that combines both the teachers' and students' needs and rights.

As for the parenting styles model, it is understood along two orthogonal axes: demand and support (Darling & Steinberg, 1993). Demand refers to characteristics related to goal-setting, parental expectations, and desired behaviors, while support encompasses emotional traits like empathy, flexibility, and nurturance. The interaction of these dimensions underpins four styles: authoritative (high demand and high support), authoritarian (high demand and low support), permissive (low demand and high support), and neglectful (low demand and low support) (Darling & Steinberg, 1993).

Theoretically, Darling and Steinberg's (1993) parenting styles model can encompass Marchezini-Cunha and Tourinho's (2010) teaching model and was used in this study with the aim of understanding socioemotional aspects, not just technical and didactic aspects. The aggressive (authoritarian) dimension is understood as low support and high demand, the passive (permissive) dimension is seen as high support and low demand, and the assertive (democratic) dimension as high support and high demand, while the neglectful dimension is characterized by low support and low demand (Darling & Steinberg, 1993; Marchezini-Cunha & Tourinho, 2010). This theoretical framework was adopted as the scope for the creation of the first version of ISSe (Valentini et al., 2020).

The first version of the inventory was constructed with 60 items arranged on a five-point Likert-type response scale (1 = not at all characteristic to 5 = completely characteristic), with both positive and negative items, in line with the study's proposal to control for acquiescence bias. The informant-report instrument aims to assess the students' perception of the socioemotional support they receive from the teacher. In the analysis without acquiescence control, the instrument showed an average factor loading of 0.63 for positive items and -0.54 for negative items. With acquiescence control, this difference decreased to 0.60 for positive items and -0.57 for negative items, corresponding to a 9% of spurious variance due to acquiescence bias. Acquiescence refers to a bias in which the respondent positively endorses an item indiscriminately, regardless of its content, even when Likert-scale items are reversed (Hernández-Dorado et al., 2021; Rammstedt et al., 2023). The results also indicated a unidimensional model with low discriminant validity due to high correlations among the proposed factors, suggesting that students assess teacher support at different levels but not in distinct dimensions (Valentini et al., 2020).

Therefore, the aim of this study is to review the items of the ISSe to enhance the scale's structure, which is intended to assess the students' perception of socioemotional support received from the teacher (Valentini et al., 2020). Specifically, we seek evidence of the internal structure and of the control for acquiescence bias in the instrument, which can affect the factor structure of self-report instruments (Primi, Santos, De Fruyt, Hauck-Filho et al., 2019).

Method

Participants

For the study, data were collected from a non-probabilistic sample of 232 students from elementary and high school in Brazil, including 102 males and 130 females, ranging in age from 12 to 29 years ($M = 16.9$; $SD = 1.63$), with only seven cases being above 18 years old. The majority of students attended public schools ($N = 218$), with 24.2% in elementary school and 75.8% in high school. Participants represented 24 Brazilian states, primarily from São Paulo (28.2% of the sample), Paraná (12.7%), and Rio Grande do Sul (10.5%). Most students self-identified as white (46.0%) or mixed-race (*pardo*) (41.0%).

Instruments

Inventory of Supporting for Socio-Emotional Skills - Revised (ISSe-r). The informant-report inventory aims to assess the students' perception of the support received from the teacher for socioemotional development. The instrument consists of 72 items in a five-point Likert-type response format, with anchor points ranging from '1 = not at all characteristic' to '5 = completely characteristic'. The inventory includes both positive items (e.g., "My teacher encourages students to seek creative solutions for tasks") and negative items (e.g., "My teacher yells at students"). This strategy is intended to help control for response biases.

Procedures

The project was submitted and approved by the Ethical Research Committee in accordance with the guidelines outlined in Resolution CNS 510/2016. The project received approval from the Ethical Research Committee of the Universidade São Francisco (USF, University of São Francisco)

(Certificate of Presentation for Ethical Approval: 23740619.8.0000.5514). The 72 items of the Inventory of Supporting for Social-Emotional Skills (ISSe-r) were derived from a review of items from the instrument's initial version (Valentini et al., 2020). These items were revised to minimize the effects of halo, acquiescence, and social desirability biases. The researchers of this study organized a preliminary version of the items and submitted them for evaluation by a committee composed of faculty and doctoral students from a specialized research group in the field of developmental and educational psychology with expertise in the socioemotional skills construct.

The final version of the instruments was administered to students virtually through the authors' own platform link, with an approximate duration of 30 minutes. Consent was obtained via electronic signatures on the Informed Consent Form from parents/guardians, while students provided digital assent through the Assent Form. Participation was only permitted after confirmation of both documents.

The analyses were conducted using Mplus software version 8 to explore the internal structure of the instrument. Initially, Exploratory Factor Analysis was performed to examine the factorial arrangement of the items. Subsequently, confirmatory analyses were conducted to assess the item arrangement within the parental support and demand model (Darling & Steinberg, 1993), including one analysis with two factors (support and demand) and another with four factors (positive support, positive demand, negative support, negative demand). The factors were rotated using the Geomin method, and parameters were estimated using the Weighted Least Squares Mean and Variance Adjusted estimator. Based on the best-fitting four-factor model, the five items with the highest factor loadings for support and demand (in both positive and negative dimensions) were selected. With $N = 238$, our sample size satisfies the minimum factor analysis criterion of 10 participants per item (for the 20-item version) and aligns with comparable studies (Valentini et al., 2020).

Subsequently, latent modeling analyses were conducted using Structural Equation Modeling, followed by the control for acquiescence bias through the Random Intercept model (Maydeu-Olivares & Coffman, 2006; Weijters & Baumgartner, 2021). In this model, a latent variable is estimated to capture acquiescence, and the factor loadings are fixed at 1 (for both positive and negative items). Four models were tested with the support and demand factors, as follows: (a) a two-factor model (support and demand) without acquiescence control; (b) a four-factor model (positive support, positive demand, negative support, and negative demand) without acquiescence control; (c) a two-factor model (support and demand) with acquiescence control; and (d) a four-factor model (positive support, positive demand, negative support, and negative demand) with acquiescence control. Finally, a bifactor analysis was conducted, testing a general factor for the model. Model fit was assessed using the Tucker-Lewis Index (TLI, > 0.95), the Comparative Fit Index (CFI, > 0.95), and the Root Mean Square Error of Approximation (RMSEA, < 0.08) (Hu & Bentler, 1999).

Results

To address the objective of testing the internal structure, we assessed models with two and four factors in line with the conceptual model of support and demand (Darling & Steinberg, 1993), both with and without acquiescence control. The initial version, with 72 items, had one item removed due to descriptive issues. However, this 71-item version did not exhibit satisfactory fit indices (Table 1).

Table 1*Reduced version of items in two factors of Support and Demand, with and without acquiescence bias*

Models	χ^2 (df)	TLI	CFI	RMSEA (90% CI)
Four factors with 71 items (w/o_Acq)	4311.2 (2408)	0.86	0.87	0.06 (0.056–0.061)
Two factors with 71 items (w/o_Acq)	4994.6 (2413)	0.81	0.82	0.07 (0.065–0.071)
Four factors with 71 items (Acq)	3928.4 (2407)	0.89	0.89	0.05 (0.049–0.055)
Two factors with 71 items (Acq)	3937.4 (2412)	0.89	0.89	0.05 (0.049–0.055)
Four factors with 20 items (w/o_Acq)	455.1 (164)	0.94	0.95	0.09 (0.078–0.097)
Two factors with 20 items (w/o_Acq)	703.7 (169)	0.89	0.90	0.12 (0.108–0.126)
Four factors with 20 items (Acq)	41.5 (163)	0.95	0.96	0.08 (0.071–0.081)
Two factors with 20 items (Acq)	483.4 (168)	0.94	0.94	0.09 (0.081–0.099)

Note: CFI: Comparative Fit Index; RMSEA: Root Mean Square Error of Approximation; TLI: Tucker–Lewis Index; w/o_Acq: Model without acquiescence; Acq: Model with acquiescence.

In addition to the fit issue with the 71-item version, we identified some low factor loadings (Table 2). For instance, item 6, “My teachers interfere in students’ emotional lives”, showed a nearly zero loading (0.07), and item 32, “My teachers are very strict and don’t allow students to talk about their feelings”, exhibited a loading opposite to what was expected (0.67). Our hypothesis was that part of this issue was due to acquiescence. Indeed, modeling acquiescence bias slightly improved the fit indices, but they still remained below the expected minimum thresholds (TLI < 0.95; CFI < 0.95; RMSEA > 0.08). To address this issue, we selected the 20 items with the highest psychometric performance. Analyzing Table 1, it can be observed that the fit indices were close to acceptable levels in the reduced 20-item versions, especially for the models with acquiescence control. Reduced scales prove more appealing to respondents, who are more motivated and experience less fatigue (Ximenes et al., 2020). Furthermore, these versions may indicate better fit indices, with adequate psychometric properties and parameters for accuracy and stability in the factorial structure.

Table 2*Reduced version of the Inventory of Supporting for Socio-emotional Skills in the four- and two-factor models of Support and Demand, with and without acquiescence bias control*

Item	Content	4 Factors			2 Factors		
		W/o_Acq	With_Acq	Dimension	W/o_Acq	With_Acq	Dimension
7	My teachers ask students to express their opinions	0.81	0.93	Dem_Pos	0.74	-0.73	Demand
11	My teachers demand that students express their opinions	0.65	0.79	Dem_Pos	0.59	-0.58	Demand
12	My teachers couldn’t care less about students’ feelings	0.79	0.87	Sup_Neg	0.77	0.77	Support
15	My teachers care about students’ feelings	0.79	0.87	Sup_Pos	-0.76	-0.78	Support
16	My teachers ignore students’ opinions	0.76	0.86	Dem_Neg	-0.71	0.71	Demand
35	My teachers abandon students who are struggling	0.84	0.94	Sup_Neg	0.81	0.81	Support
40	My teachers believe in the students’ abilities	0.89	0.98	Sup_Pos	-0.86	-0.86	Support
41	My teachers doubt the students’ abilities	0.82	0.93	Sup_Neg	-0.77	0.78	Support
43	My teachers try to show the bright side of things	0.73	0.85	Dem_Pos	0.67	-0.67	Demand
46	My teachers ask students who understand the material to help those who are struggling	0.67	0.79	Dem_Pos	0.61	-0.61	Demand
49	My teachers encourage students to express their opinions	0.84	0.96	Sup_Pos	-0.82	-0.81	Support
51	My teachers believe that students’ opinions don’t count	0.83	0.94	Dem_Neg	-0.78	0.78	Demand
53	My teachers prohibit students from bullying each other	0.59	0.68	Dem_Pos	0.54	-0.54	Demand
62	My teachers ridicule students	0.84	0.96	Sup_Neg	0.82	0.81	Support
65	My teachers leave students feeling upset	0.72	0.85	Dem_Neg	-0.67	0.66	Demand
67	My teachers don’t care about students	0.84	0.94	Sup_Neg	0.81	0.81	Support
68	My teachers prevent students from participating	0.64	0.76	Dem_Neg	-0.59	0.59	Demand
69	My teachers say that students can have a bright future	0.83	0.93	Sup_Pos	-0.80	-0.80	Support
70	My teachers motivate students to use their imagination	0.79	0.90	Sup_Pos	-0.76	-0.76	Support
72	My teachers yell at students	0.66	0.78	Dem_Neg	-0.61	0.61	Demand

Note: W/o_Acq: Without acquiescence analysis; With_Acq: With acquiescence analysis; Sup_Pos: Positive support factor; Sup_Neg: Negative support factor; Dem_Pos: Positive demand factor; Dem_Neg: Negative demand factor.

We also used factor loadings to assess the best-fitting scoring structure. Table 3 presents the 20 selected items, derived from the original item map for the reduced version of the ISSe-r, along with their descriptions and factor loadings. This new inventory configuration was reanalyzed with and without acquiescence bias control. The four-factor model examined the distribution of positive support, negative support, positive demand, and negative demand variables. The two-factor model analyzed the support and demand variables.

Table 3

Bifactor Analysis of the Reduced Version of Inventory of Supporting for Socio-emotional Skills in the Two-Factor Support and Demand Model

Item	Factors		
	General	Support	Demand
7	-0.69	-	0.49
11	-0.55	-	0.50
12	0.77	0.07	-
15	-0.77	0.09	-
16	0.71	-	0.15
35	0.80	0.23	-
40	-0.87	0.09	-
41	0.77	0.34	-
43	-0.68	-	0.21
46	-0.61	-	0.25
49	-0.80	0.42	-
51	0.77	-	0.25
53	-0.54	-	-0.02
62	0.79	0.38	-
65	0.65	-	0.36
67	0.81	0.20	-
68	0.59	-	0.25
69	-0.81	0.12	-
70	-0.75	0.30	-
72	0.61	-	0.27

The models with two and four factors showed high correlations among the factors, so we opted for a new analysis to better understand these data and improve the model fit. Thus, we tested a bifactor model with a general factor and two specific factors for support and demand. This model fit the data well (TLI = 0.956, CFI = 0.965, RMSEA = 0.075 [90% CI = 0.065–0.085]), with loadings above 0.50 on the general factor (Table 4).

The bifactor model shows a predominance of loadings on the general factor. It is noticeable that some items did not load on the specific factors: item 12 (0.07) “My teachers couldn’t care less about students’ feelings”, item 15 (0.09) “My teachers care about students’ feelings,” and item 40 (0.09) “My teachers believe in students’ abilities”. All of these items are part of the support factor and overlap with the general factor. On the other hand, item 11 (0.50) “My teachers demand that students express their opinions” had the highest loading on a specific factor, in this case, the demand factor.

Regarding the content, the general factor’s positive pole encompasses teacher behaviors demonstrating motivational support (“My teachers motivate students to use their imagination”), democratic engagement (“My teachers ask students to express their opinions”), and belief in students’ potential (“My teachers believe in students’ abilities”). Conversely, the negative support pole reveals emotional neglect (“My teachers abandon students who are struggling”), verbal aggression (“My teachers yell at students”), and humiliating behaviors (“My teachers ridicule students”).

Table 4*Full-item version in the four- and two-factor models of Support and Demand, with and without Acquiescence Bias Analysis*

1 of 2

Item	Content	4 Factors			2 Factors		
		W/o_Acq	With_Acq	Dimension	W/o_Acq	With_Acq	Dimension
1	My teachers encourage students to think deeply about ideas	0.660	0.613	Sup_Pos	0.634	0.621	Support
2	My teachers overemphasize the importance of feelings	0.294	0.260	Sup_Pos	0.275	0.264	Support
3	My teachers are human; sometimes they lose their temper	0.311	0.276	Sup_Neg	-0.270	-0.278	Support
4	My teachers are "square", they prefer students to do things the same way all the time	0.769	0.715	Sup_Neg	-0.716	-0.721	Support
5	My teachers encourage students to persist, even when facing difficulties	0.754	0.711	Sup_Pos	0.724	0.721	Support
6	My teachers interfere in the emotional lives of students	0.099	0.075	Sup_Pos	0.086	0.076	Support
7	My teachers ask students to express their opinions	0.796	0.733	Dem_Pos	0.713	0.702	Demand
8	My teachers don't allow students to give up	0.445	0.407	Sup_Pos	0.419	0.414	Support
9	My teachers are tolerant of the drama that students create	-0.294	-0.277	Sup_Neg	0.285	0.281	Support
10	My teachers like students to think in a simple way (without getting too abstract)	0.322	0.281	Sup_Neg	-0.278	-0.285	Support
11	My teachers insist that students express their opinions	0.648	0.585	Dem_Pos	0.571	0.560	Demand
12	My teachers couldn't care less about students' feelings	0.816	0.766	Sup_Neg	-0.763	-0.772	Support
13	My teachers prefer students to do things the same way all the time	0.723	0.666	Sup_Neg	-0.670	-0.672	Support
14	My teachers praise students who share the same opinions as them	0.368	0.324	Dem_Neg	-0.326	-0.335	Demand
15	My teachers care about students' feelings	0.815	0.770	Sup_Pos	0.776	0.781	Support
16	My teachers disregard students' opinions	0.735	0.673	Dem_Neg	-0.689	-0.695	Demand
17	My teachers understand students' feelings	0.692	0.643	Sup_Pos	0.663	0.652	Support
18	My teachers are so laid-back that they lose the respect of students	-0.269	-0.273	Sup_Pos	-0.272	-0.278	Support
19	My teachers prefer students to think superficially	0.517	0.467	Sup_Neg	-0.468	-0.472	Support
20	My teachers are neutral; they prefer not to get close to students	0.564	0.523	Sup_Neg	-0.520	-0.527	Support
21	My teachers can keep their cool	0.405	0.388	Sup_Pos	0.390	0.391	Support
22	My teachers are very meticulous; they want analysis down to the smallest details	0.231	0.640	Sup_Pos	0.209	0.198	Support
23	My teachers value students who do things the same way all the time	0.468	0.411	Sup_Neg	-0.416	-0.416	Support
24	My teachers easily lose their temper	0.600	0.549	Sup_Neg	-0.546	-0.553	Support
25	My teachers value students who are creative	0.576	0.532	Sup_Pos	0.550	0.539	Support
26	My teachers criticize students who are creative	0.660	0.609	Sup_Neg	-0.609	-0.615	Support
27	My teachers always let students give their opinions and forget the subject matter	0.004	-0.019	Sup_Pos	-0.015	-0.019	Support
28	My teachers encourage students to think of various alternatives to problems	0.687	0.637	Sup_Pos	0.659	0.646	Support
29	My teachers propose so many alternatives that sometimes it leads nowhere	-0.347	-0.346	Sup_Pos	-0.352	-0.351	Support
30	My teachers encourage students to think of a single alternative to solve all problems	0.351	0.320	Sup_Neg	-0.314	-0.322	Support
31	My teachers only discuss subjects related to the material	0.406	0.370	Sup_Neg	-0.364	-0.373	Support
32	My teachers are very strict; they don't allow students to talk about feelings	0.725	0.668	Sup_Neg	-0.671	-0.674	Support
33	My teachers are available to discuss students' love lives	0.649	0.607	Sup_Pos	0.622	0.615	Support
34	My teachers support students in abandoning activities they don't understand	0.605	0.553	Sup_Neg	-0.551	-0.559	Support
35	My teachers abandon students who are struggling	0.848	0.791	Sup_Neg	-0.797	-0.798	Support
36	My teachers are intolerant to quitting	0.144	0.111	Sup_Pos	0.125	0.113	Support
37	My teachers encourage students to use their creativity	0.814	0.753	Sup_Pos	0.787	0.763	Support
38	My teachers require creative tasks	0.575	0.499	Dem_Pos	0.494	0.478	Demand
39	My teachers want things done the same way all the time	0.704	0.642	Sup_Neg	-0.650	-0.648	Support
40	My teachers believe in the students' abilities	0.890	0.838	Sup_Pos	0.856	0.849	Support
41	My teachers doubt the students' capability	0.827	0.766	Sup_Neg	-0.776	-0.772	Support

Table 4*Full-item version in the four- and two-factor models of Support and Demand, with and without Acquiescence Bias Analysis*

2 of 2

Item	Content	4 Factors			2 Factors		
		W/o_Acq	With_Acq	Dimension	W/o_Acq	With_Acq	Dimension
42	My teachers demand that students put effort into their activities	0.499	0.448	Dem_Pos	0.433	0.429	Demand
43	My teachers try to show the bright side of things	0.796	0.728	Dem_Pos	0.712	0.697	Demand
44	My teachers encourage students to be optimistic	0.711	0.657	Sup_Pos	0.681	0.667	Support
45	My teachers leave students feeling discouraged	0.806	0.746	Sup_Neg	-0.753	-0.753	Support
46	My teachers ask students who understand the material to help those who are struggling	0.755	0.688	Dem_Pos	0.671	0.659	Demand
47	My teachers encourage students to collaborate with their peers	0.751	0.696	Sup_Pos	0.724	0.705	Support
48	My teachers discourage students from being selfish	0.749	0.697	Sup_Neg	-0.702	-0.703	Support
49	My teachers encourage students to express their opinions	0.834	0.777	Sup_Pos	0.807	0.787	Support
50	My teachers require students to participate in discussions	0.484	0.422	Dem_Pos	0.421	0.405	Demand
51	My teachers believe that students' opinions don't count	0.844	0.775	Dem_Neg	-0.797	-0.801	Demand
52	My teachers don't care if students experience bullying	0.782	0.725	Sup_Neg	-0.730	-0.731	Support
53	My teachers prohibit students from bullying each other	0.620	0.582	Dem_Pos	0.558	0.559	Demand
54	My teachers understand the feelings of students who suffer from bullying	0.716	0.667	Sup_Pos	0.688	0.676	Support
55	My teachers maintain students' good mood	0.703	0.663	Sup_Pos	0.680	0.671	Support
56	My teachers tease students to make the class laugh	-0.358	-0.360	Sup_Pos	-0.355	-0.366	Support
57	My teachers are fun and make students cheerful	0.706	0.660	Sup_Pos	0.680	0.669	Support
58	My teachers encourage students to help their peers	0.781	0.722	Sup_Pos	0.753	0.732	Support
59	My teachers instruct students to collaborate with their classmates	0.504	0.437	Dem_Pos	0.437	0.419	Demand
61	My teachers don't notice when students are experiencing bullying	0.448	0.418	Sup_Neg	0.412	-0.420	Support
62	My teachers ridicule students	0.846	0.784	Sup_Neg	-0.454	-0.790	Support
63	My teachers don't discuss bullying	0.490	0.459	Dem_Neg	-0.809	-0.473	Demand
64	My teachers guide students to be polite	0.577	0.532	Sup_Pos	0.551	0.540	Support
65	My teachers leave students in a bad mood	0.722	0.656	Dem_Neg	-0.674	-0.678	Demand
66	My teachers make students feel confident	0.763	0.708	Sup_Pos	0.735	0.717	Support
67	My teachers don't care about students	0.845	0.789	Sup_Neg	-0.789	-0.796	Support
68	My teachers prevent students from being participating	0.636	0.584	Dem_Neg	-0.595	-0.602	Demand
69	My teachers say that students can have a bright future	0.818	0.767	Sup_Pos	0.788	0.777	Support
70	My teachers motivate students to use their imagination	0.827	0.770	Sup_Pos	0.798	0.780	Support
71	My teachers believe that students are incapable of learning	0.730	0.694	Sup_Neg	-0.684	-0.680	Support
72	My teachers shout at students	0.671	0.611	Dem_Neg	-0.621	-0.631	Demand

Note: W/o_Acq: Without acquiescence analysis; With_Acq: With acquiescence analysis; Sup_Pos: Positive support factor; Sup_Neg: Negative support factor; Dem_Pos: Positive demand factor; Dem_Neg: Negative demand factor; Bold: Best loadings for each factor; item 60 was removed from the original item map due to descriptive issues.

Discussion

The study aimed to analyze the revised version of the Inventory of Supporting for Social-Emotional Skills (ISSe-r). We sought to test the evidence of internal structure validity and acquiescence bias control. Different models were tested with two and four factors for both the original and the reduced versions of the instrument. The two-factor model tested support and demand factors (Darling & Steinberg, 1993), while the four-factor model examined support and demand factors, further divided into positive and negative aspects. After the analysis, the bifactor model was identified as the best-fitting model.

Considering only the fit indicators, the four-factor model with acquiescence control showed the best factor loadings for the items. The acquiescence bias was confirmed in the model,

accounting for 6.6% of the total variance. Acquiescence is a response pattern in which the subject agrees with scale items (i.e., always saying yes) without considering the items' proposed content (Vieira et al., 2021). In Valentini's study, acquiescence control improved the results, which is very common in Likert-type scales, indicating that at least 9% of the variance was attributable to this bias (Valentini et al., 2020).

Acquiescence can be detrimental, compromising the factorial structure of the scale and distorting evidence of convergent and discriminant validity (Marder et al., 2021). It is worth noting that the instrument does not have an equal distribution of positive and negative items. Among different methods for acquiescence control, the literature suggests that balanced-item scales are an alternative for acquiescence control (Hauck Filho et al., 2021; Martins et al., 2023; Primi, Santos, De Fruyt, & John, et al., 2019).

In a criterion validity study for the second version of the SENNA, an instrument that assesses the socioemotional development of children and adolescents, the authors demonstrated that criterion validity significantly improves with the inclusion of negatively keyed items in the scale. The inclusion of these items allows for the control of a general acquiescence variable, thus enhancing the instrument's structure and internal consistency (Primi et al., 2020).

The choice of the bifactor model in this study was justified both by the low discriminant validity among the factors and by the need to understand the latent structure underlying students' evaluations. The associations between support and demand variables were high within each pole, namely: positive support and demand ($r = 0.975$), and negative support and demand ($r = 0.988$). This low discriminant validity among the factors led to the testing of a new analytical model. The high correlations between the dimensions of support and demand, both positive and negative, suggest that students do not clearly distinguish between these aspects, but rather perceive them as manifestations of a single global judgment. The bifactor model made it possible to test this hypothesis by isolating the common variance of the items into a general factor, which proved to explain substantially more of the variance in the data than the specific factors (Reise, 2012). This indicates that, in practice, students evaluate their teachers in terms of a general continuum of support, ranging from perceptions of "high support" to "low support", without making refined distinctions between types of demand or specific forms of assistance. Thus, the structure of the model not only presented better fit indices but also more accurately reflected the cognitive and affective processes involved in students' perceptions of teacher support.

Just as in Valentini et al.'s (2020) study, the results of this study partly corroborate the adapted model for support and demand proposed by Darling and Steinberg (1993) and a multidimensional structure. The presence of factors from the model is evident, but without predominance as first-order factors. There is an overlap of a general factor that explains a significant portion of the variance in the results, even though other factors still exist. These data represent an advancement compared to the previous version due to the reduced number of items, which facilitates both the instrument's administration and its optimization for assessments in large student groups, thus contributing to a greater understanding of educational contexts.

The study still has limitations regarding the investigation of the presence of other response biases, such as the halo effect. This bias was initially described by psychologist Edward Thorndike and refers to the tendency to evaluate a particular subject as a whole based on a single characteristic (Nisbett & Wilson, 1977; Schmidt et al., 2023). To address this issue, it is suggested that future instrument studies employ forced-choice response formats. It is known that this format reduces response biases because the subject must assess the usefulness level of equally desirable items allocated within the same block (Brown & Maydeu-Olivares, 2018).

Conclusion

Despite its limitations, the present study provides a revised version of an instrument for assessing perceived socioemotional support in the educational context. The school environment is a privileged setting for socioemotional development not only because it is a structured learning environment, but also because it fosters constant interactions with significant adult figures, such as teachers. Among these relationships, the teacher-student bond stands out as one of the main determinants of students' school engagement and emotional well-being. The way students perceive the socioemotional support provided by their teachers has direct implications for how they experience school: students who perceive their teachers as accessible, empathetic, and responsive tend to report a stronger sense of belonging, better self-regulation skills, and greater motivation for learning. Thus, assessing this perception becomes a relevant pathway for understanding the quality of pedagogical interactions and the emotional climate of the classroom. Instruments such as the ISSe allow for the capture of this subjective dimension, providing data that can inform more effective interventions in the educational context and contribute to the holistic development of students.

Assessing teachers' socioemotional support is not merely a psychometric exercise, but a vital tool for identifying gaps in Brazilian schools – particularly in contexts with scarce mental health resources. Our instrument can guide teacher training programs focused on resilience-building and nonviolent communication strategies. In the Brazilian educational context, the teacher-student relationship plays a crucial role in promoting both academic achievement and emotional well-being. Given the social and structural challenges faced by many schools in Brazil, the presence of a supportive and responsive teacher can serve as a protective factor, fostering student engagement, reducing dropout rates, and encouraging resilience. This relationship is particularly relevant in underserved communities, where the school often functions as one of the few stable and nurturing environments available to children and adolescents.

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