

Measuring School Well-Being in Primary Education: A Systematic Review

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Abstract

The aim was to explore the literature for instruments that assess school well-being, identifying their design features and construct appropriateness. A systematic review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020, and the PICO strategy to formulate the research questions. Fifty-two articles on instruments to assess pupils' school well-being were analysed using an interpretive approach. The results showed that school well-being is a topic of global interest, with China standing out, with non-uniform growth since 2007, being most notable in 2018 and 2019. Longitudinal and qualitative studies have appeared more frequently in recent years. The presence of multidimensional instruments stood out, with no consensus on the identification of the items to be assessed from a holistic perspective. This study paves the way for the design of a questionnaire that operationalise school well-being, considering not only the literature, but also the direct perceptions of pupils.

Keywords:

School Well-Being, Instruments, Primary School Pupils, Systematic Review

Introduction

Child well-being is a major concern in recent decades due to the increase in psychological and mental health problems at an early age (Carter & Andersen, 2023; Kutsar et al., 2019). A priority focus of attention for child well-being is the school environment, as school is the place where children spend a large part of their daily lives interacting with their peers (Cevikbas, 2021; Gempp & González-Carrasco, 2021; Hossain et al., 2023). School is a source of human development and of happiness and satisfaction for children, an environment in which they can develop their sense of belonging, security and personal development (Calp, 2020; Cevikbas, 2021).

Nowadays, school well-being is widely recognized as a multidimensional concept (Carter & Andersen, 2023; Fanchini et al., 2019; Konu & Rimpela, 2002) made up of cognitive elements (satisfaction with school life and affect), psychological elements (self-actualization and personal development) and social elements (student interactions with other people in the school system) (Losada-Puente



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et al., 2022). The experiences that children between the ages of 6 and 12 have at school - a stage that in many education systems is a transition from Primary to Secondary - will mark their later experiences (Cevikbas, 2021; Enríquez et al., 2022; Su et al., 2019). Assessing school well-being at this stage represents a challenge, not only because of the intrinsic complexity of the psychosocial development of students in this period (Kellock, 2020), but also because of the difficulty of operationalising and measuring a construct for which there is still a fragmented body of work, with a diversity of conceptual approaches and relationships with other concepts (Hossain et al., 2023). For instance, the literature review on the conceptualisation of well-being carried out by Losada-Puente et al. (2022) concluded, after analysing 53 studies in the period 2002-2020, that there are multiple ways of approaching the construct, depending on the perspective, theory or model adopted, which makes it difficult to reach an agreement on what the defining elements of positive school experience are.

Hence, it is necessary to investigate more deeply how the construct is being measured by the studies conducted so far, in order to check for commonalities and discrepancies between them, and to see to what extent these measures of school well-being are direct (i.e. focused on what defines the construct) or indirect (i.e. through concepts related to school well-being, such as life satisfaction, happiness, emotions, etc. or one or more of its dimensions, such as school conditions, peer and teacher-student relationships, school climate, meanings of achievement, school engagement, among others (Anderson and Graham, 2016; Calp, 2020; Konu and Rimpela, 2002; Ramírez-Casas and Alfaro-Inzunza, 2018; Tian et al., 2016, 2018).

Moreover, current research highlights the need to study these elements from the point of view of the student himself (Anderson & Graham, 2016; Estola et al., 2013; Mendiri et al., 2024) whereas, until now, measurements have either been based on adults' views of what they understand wellbeing to be at school (Estola et al., 2013), or have been based on instruments designed for adults and adapted for children (Stasulane, 2017) and therefore far removed from children's voices about what it means for them to be well at school (Anderson and Graham, 2016; Kutsar et al., 2019). As Calp (2020) notes, "people can look different and think different" (p. 318) and, in the case of the students, their ideas and thoughts about school are a key and distinct element of the adult world. Hence the interest in delving deeper into the pupils' school experience at this educational stage through a systematic literature review study with the aim of improving the theoretical understanding of school well-being and, from there, drawing useful conclusions for decision-making on how to measure the construct of school well-being in primary education.

The general purpose was further elaborated into three specific objectives: (a) to explore the scientific literature for instruments assessing school well-being; (b) to identify the type of measure (direct or indirect) used in the instruments explored; (c) to examine the place of student voice in the design of the instruments; and (c) to further study the characteristics of the instruments and their suitability for assessing school well-being from a broad view of the concept.

Material and Method

This study followed a systematic review methodology through which research is searched, evaluated, and synthesized, following a step-by-step, rigorous, transparent, and replicable procedure to guarantee the reliability of the findings (Grant & Booth, 2009). The systematic review of the international literature was conducted using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) 2020 (Page et al., 2021). This format allowed us to carry out an exhaustive and comprehensive collection and analysis of the literature, explore the current state of knowledge and offer recommendations that may be useful for practice and for future research (Grant & Booth, 2009).

Research strategy

Four internationally renowned databases were used to search for empirical studies between 2002 and 2021: Scopus and Web of Science (general), ERIC (specific to Education) and PsycInfo (specific to Psychology). All the database searches were limited to English-language peer-reviewed articles. The research questions that drove the review followed the PICO strategy (Patient/Problem, Intervention, Comparison group and Outcome) (Miller, 2001), namely, what kind of instruments has been designed to assess pupils' school well-being? To what extent these instruments are sufficient, complete, and exhaustive to assess the breadth of this concept and how it is understood and expressed by the pupils? What is the starting point adopted to design these instruments (scientific literature, school professionals and other educational agents, pupils, etc.)? Relying on these questions, the keywords were established considering each letter from the PICO strategy (table 1).

Inclusion and exclusion criteria

After a comprehensive definition of keywords, inclusion and exclusion search criteria were outlined and applied to by means of database filters. Inclusion criteria included: (a) studies between 2002-2021 that used instruments to measure school well-being of pupils aged 6-12 in the period. The beginning was established in 2002 due to the publication of Well-being in schools: a conceptual model by Anne Konu and Matti Rimpelä, an article that established a

Table 1.
PICO strategy: elements and keywords.

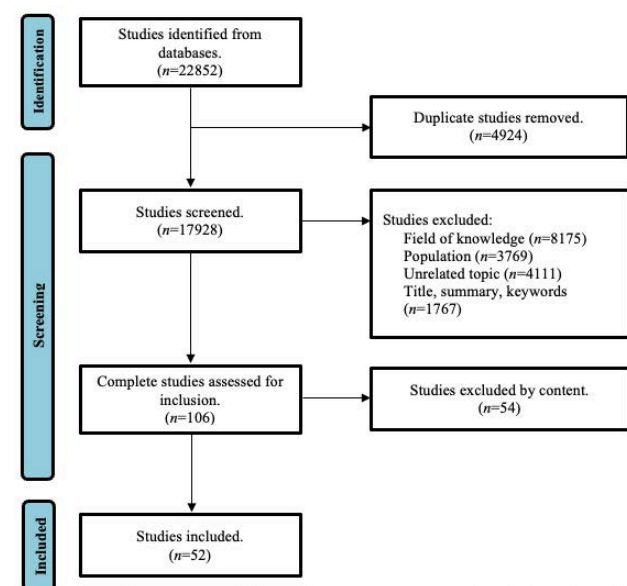
Elements	Description	Keywords
Participants	Studies focused on pupils aged 6-12 (primary school and/or lower high school), both based on pupils' perceptions or on other educational agents (e.g. teachers). Research measuring school well-being of pupils in early childhood education (< 6 years), or upper high school (> 12 years), or general well-being, was eliminated.	Primary Education; Elementary Education
Interventions	Studies with an ex-post-facto design and literature reviews were included. Both those that considered only school well-being and others that included other variables were considered.	School wellbeing; school well-being
Comparison	This criterion was not relevant in this research.	
Outputs	Studies that present results obtained using instruments for measuring school well-being of pupils aged 6-12.	Journal; journal book; book; book series; book chapter; chapter; article; journal article; reports – descriptive; reports – evaluative; reports – research; numerical/quantitative data; test/questionnaires

conceptual model of school well-being that has served as a framework for some subsequent studies; (b) studies in English, French, Portuguese, and Spanish were included, as these are the languages in which most studies on this subject have been found (Losada-Puente et al., 2022); and (c) only peer-reviewed scientific articles and books to ensure greater rigor in the information collected. As for the exclusion criteria, there were not included: (a) studies measuring school well-being of pupils under 6 years or over 12; (b) studies published before 2002; and (c) publications that were not in article or book format. These inclusion and exclusion criteria were applied by means of database filters.

Study selection procedure

Under the above inclusion and exclusion criteria, 22852 studies were identified ($n = 890$ ERIC, $n = 6351$ PsycInfo, $n = 4008$ Scopus, $n = 11603$ WoS). The final selection was conducted through the procedure specified in PRISMA 2020 (Page et al., 2021) and it is graphically represented in figure 1.

The identified studies were examined, filtering the duplicated ones using an Excel sheet ($n = 4924$). The remaining 17928 studies were analysed according to the area of knowledge, population, related topic, title, abstract and keywords. There were excluded studies that were not classified as belonging to social sciences or psychology ($n = 8175$), corresponding to the primary or lower high school education ($n = 3769$), and /or focused on school well-being ($n = 4111$). Regarding the title, abstract and keywords, there were only included those publications on instruments that measured well-being quantitatively and/or qualitatively, either exclusively or in combination with other variables. Instruments that did not meet these characteristics were therefore discarded ($n = 1767$).

Figure 1.
Flow diagram of the study selection procedure through PRISMA


After refinement, a total of 106 documents were comprehensively reviewed in the Mendeley reference manager. A new checking on the sample adequacy – pupils aged 6-12 (primary school and/or lower high school) – was conducted. Fifty-four documents were eliminated, thereby obtaining 52 documents to be analysed.

Results

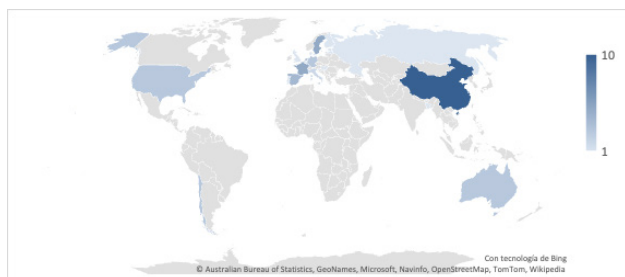
Descriptive analysis

School well-being is a topic of worldwide interest (Figure 2). China is the country that leads its study ($n = 10$) followed by France and Sweden ($n = 5$), Spain ($n = 4$) and Australia, Germany, Chile, the US, and the Netherlands ($n = 3$). Italy addresses it twice and Bangladesh, Portugal, Belgium, Estonia,

Denmark, Finland, Hungary, Latvia, United Kingdom, Russia and Slovenia only one under the selection conditions. Despite the predominance of China, they concentrated on the European continent ($n = 32$), compared to the Asian ($n = 11$), the American ($n = 6$) and the Oceanic ($n = 3$), not identifying any on Africa.

Figure 2.

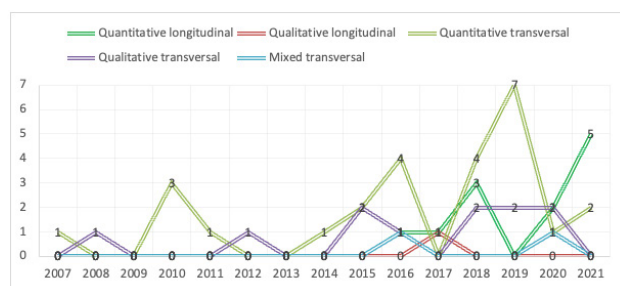
Geographical distribution of the study of school well-being in Primary/ Low Secondary School.



The study on the measurement of school well-being began to represent a topic of interest since 2007 (figure 3), increasing in recent years - especially in 2018 ($n = 9$) and 2019 ($n = 9$) - in a non-uniform way (no research was found under our requirements in 2009 and 2013).

Figure 3.

Typology of studies about school wellbeing (2007-2021).



Mostly, the study of school well-being has presented a quantitative research design ($n = 38$; figure 3), especially the cross-sectional. More recently longitudinal quantitative studies began to be designed, experiencing an increase over the last years, especially in 2021 ($n = 5$) - except in 2019 ($n = 0$) -. Qualitative research ($n = 12$) was addressed for the first time in 2008 and, since 2015, they began to have a greater presence, with one or two articles per year - except in 2017 and 2021 -. Other typologies with less weight were longitudinal qualitative (2017 $n = 1$) and mixed cross-sectional (2016 and 2020 $n = 1$ each).

The studies analysed focused on pupils ($n = 51$), both exclusively on Primary Education or equivalent (elementary school, basic education, among others) ($n = 30$), and later educational stages ($n = 21$). Only one document was referred to the family's perspective on the school well-being of their children. Four studied the first years of Primary Education (1-2nd

year or equivalent), 39 focused on later years (3-6th year or equivalent) and nine addressed the entire educational stage. Six articles contained information from teachers, guidance counsellors, principals, and external observers.

Analysis of the characteristics and properties of the instruments

An exhaustive study of the 85 instruments was carried out, differentiating according to the types of measurements: unidimensional (Table 2) and made up of scales/subscales (Table 3) quantitative instruments, multidimensional quantitative instruments (Table 4), and qualitative instruments (Table 5).

A total of 16 unidimensional instruments are presented in Table 2, including both original publications and secondary sources. It highlighted the use of Rosenberg's scale (1965, as cited in Liu et al., 2021; Yang et al., 2018) almost 60 years after its design and publication. Mostly, school well-being was measured by some of its components; e.g. satisfaction with school life (Bacro et al., 2017; Murillo & Martínez, 2018; Randolph et al., 2010), the sense of belonging (Dunleavy & Burkey, 2019; Tian et al., 2016) or commitment to school (Košir et al. 2007), the self-esteem (Liu et al., 2021; Yang et al., 2018), the school canteen (Horton & Forsberg, 2020), the academic achievement (Renshaw, 2015), the acceptance of peers (Weyns et al., 2021) or the school justice (Ehrhardt-Madapathi et al., 2018). Only four instruments specifically assessed school well-being (Gempp & González-Carrasco, 2012; Košir et al., 2007; Weyns et al., 2021). To a greater or lesser level of precision, all included tests of validity and reliability, except for the Anti-Bullying Organization questionnaire (Horton & Forsberg, 2020), the Self-Reported Academic Achievement (Renshaw, 2015) and the Teacher report of students 'well-being in school' (Košir et al., 2007).

Unidimensional measures including scales/subscales were referred to in Table 3. There were 26 instruments designed ad hoc ($n = 23$) or cited in secondary sources ($n = 3$), whose use continues more than 20 years after their publication (Ehrhardt-Madapathi et al., 2018; Košir et al., 2007; Murillo & Martínez, 2018). General school well-being was a central focus in five studies (Alfaro et al., 2016; Ehrhardt-Madapathi et al., 2018; Terjestam et al., 2016; Van der Ploeg et al., 2016; Zanobini & Viterbori, 2021). The remainder studied dimensions of school subjective well-being (Chen et al., 2020; Liu et al., 2021; Liu et al., 2015; Perret et al., 2019; Renshaw & Chenier, 2018; Su et al., 2019; Tian et al., 2018; Tian et al., 2016; Tian et al., 2020; Yang et al., 2018; Yi et al., 2020) or psychological well-being (Askill-Williams et al., 2018), as well as components of school well-being, e.g. school satisfaction (Hossain et al., 2019) and satisfaction of basic psychological needs at school (Conesa & Duñabeitia, 2021; Liu et al., 2021; Su et al., 2019; Tian et al., 2018), school engagement (Yi et al.,

2020), adaptation (Perret et al., 2019) and performance (Bacro et al., 2017; Murillo & Martínez, 2018; Zhang et al., 1999), academic attitudes (Pyne et al., 2018), attitudes and behaviours toward school (Chen et al., 2020; Ehrhardt-Madapathi et al., 2018; Klatte et al., 2010; Liu et al., 2021; Su et al., 2019; Tian et al., 2018), risk of bullying (Bochaver et al., 2019), academic and personal support (Košir et al., 2007), and teacher-student relationships (Weyns et al., 2021). Less than half of the studies presented evidence of validity. In some cases, just some of its scales/subscales (Askill-Williams et al., 2018; Hossain et al., 2019). The reliability of the majority was specified by means of α .

The multidimensional measure of school well-being was used in 22 instruments (Table 4), although a minority focused directly on school well-being (Anderson & Graham, 2016; Astolfi et al., 2019; Bacro

et al., 2017; Dettmers et al., 2019; Fanchini et al., 2019; Sabri et al. 2015). Most instruments evaluate the construct based on one of its dimensions (for instance, school social well-being, in Chiva-Bartoll et al., 2020), or related concepts, e.g. justice in the classroom (Ehrhardt-Madapathi et al., 2018), acoustics (Astolfi et al., 2019; Klatte et al., 2010), self-concept (Murillo & Martínez, 2018), school satisfaction (Alfaro et al., 2016), belonging (Conboy et al., 2015), and safety (Nelen et al., 2021), motivation and teaching practice (Thoonen et al., 2011), classroom and playground climate (Filella et al., 2016), facilitators and risks of educational outcomes (Renshaw, 2015), bullying (Buda & Szirmai, 2010) and school segregation (Fouquet-Chauprade, 2014). Evidence of validity was found in half of the instruments studied. Reliability was studied by all of them, except in Fouquet-Chauprade (2014), Klatte et al. (2010), Renshaw (2015).

Table 2.

Unidimensional instruments for quantitative measure of school well-being.

Instrument	Validity	Reliability*	Source
Cuestionario sobre la Satisfacción del estudiante con la escuela (Murillo and Martínez, 2018)	Non-specified	$\alpha = .81$	Murillo & Martínez (2018)
Questionary (Organización anti-bullying, 2011)	Non-specified	Non-specified	Horton & Forsberg (2020)
Adaptation of the Chilean Early-Childhood Longitudinal Survey (Gempp and González-Carrasco, 2021)	CFA: 7 factors (RMSEA = .01 [.61 - .84])	$\rho = .86$	Gempp & González-Carrasco (2021)
Scale of Well-Being in School (Keller et al., 1996)	Non-specified	$\alpha = .90^*$	Košir et al. (2007)
School well-being scale (Weyns et al., 2021)	Non-specified	$\alpha = .88$ (Year 4), $.87$ (Year 5) e $.86$ (Year 6)	Weyns et al. (2021)
The Children's Overall Satisfaction with Schooling Scale (Randolph et al., 2011)	Non-specified	$\alpha = .92$, $r_{xy} = .76$ (5 weeks) (finish version); $\alpha = .90$, $r_{xy} = .69$ (5 weeks)	Randolph et al. (2010)
Échelle de satisfaction scolaire (Guimard et al., 2015)	Non-specified	$\alpha = .78$ (T1) and $.76$ (T2)*	Bacro et al. (2017)
The School Belonging Scale (Anderman, 2002)	Non-specified	$\alpha = .78$	Tian et al. (2016)
The behavioral and cognitive engagement in schoolwork scale (Assor et al., 2002)	Non-specified	$\alpha = .74^*$	Košir et al. (2007)
The Psychological Sense of School Membership (Goodenow, 1993)	Non specified	$\alpha \leq .80$	Dunleavy & Burke (2019)
Rosenberg's Self-Esteem Scale (Rosenberg, 1965)	CFA (Yang et al., 2018): χ^2/df (n = 807) = 3.86 (p < .001), RMSEA = .06, CFI = .98, TLI = .96*	α (Liu et al., 2021) = .85-.87, α (Yang et al., 2018) = .86 (T1), .90 (T2) and .89 (T3)*	Liu et al. (2021), Yang et al. (2018)
Self-Reported Academic Achievement (Renshaw, 2015)	Non-specified	Non specified	Renshaw (2015)
Teacher-Report Scale (Driessen et al., 2000)	Non-specified	$\alpha = .86$ (Year 4), $.88$ (Year 5) e $.87$ (Year 6)*	Weyns et al. (2021)
Teacher report of students' academic engagement (Košir et al., 2007)	Non-specified	$\alpha = .91$	Košir et al. (2007)
Teacher report of students' well-being in school (Košir et al., 2007)	Non-specified	Non-specified	Košir et al. (2007)
Vignette stories (Ehrhardt-Madapathi et al., 2018)	CFA: 1 factor ($\chi^2 = 131.376$, $df = 6$, $p \leq .001$, RMSEA = .108, CFI = .964, SRMR = .031)	$\alpha = .66-.76$	Ehrhardt-Madapathi et al. (2018)

*Extracted from the primary or secondary source analysed.

Table 3.
Unidimensional instruments for quantitative measure of school well-being with different scales/subscales.

Instrument	Scale/subscale	Validity	Reliability*	Source
Classroom Life Instrument (Johnson et al., 1983)	Peer Academic Support Scale	Non-specified	$\alpha = .68^*$	Košir et al. (2007)
	Peer Personal Support Scale		$\alpha = .78^*$	
	Teacher Academic Support Scale		$\alpha = .70^*$	
	Teacher Personal Support Scale		$\alpha = .74^*$	
Well-being questionnaire (Wustmann, 2012)	Positive emotions scale No problems scale	Non-specified	$\alpha = .78-.82^*$	Ehrhardt-Madapathi et al. (2018)
No-named (Terjestam et al., 2016)	Well-being at school scale	Non-specified	$\alpha = .71$	Terjestam et al. (2016)
	Psychological distress scale		$\alpha = .75$	
	General Stress Scale		$\alpha = .69$	
	Strengths and difficulties subscale		$\alpha = .53$	
	Peer Problems scale			
No-named (Kärnä et al., 2011)	Effortful control scale	Non-specified	$\alpha = .92$	Van der Ploeg et al. (2016)
	Change in well-being at school: general liking for school, academic self-concept, classroom atmosphere and school climate		$\alpha = .88$	
Questionario sul benessere scolastico (Marzocchi and Tobia, 2015)	Five non-specified subscales	Non-specified	$\alpha = .82^*$	Zanobini and Viterbori (2021)
Student Subjective Wellbeing Questionnaire (Renshaw, 2015)	Four subscales: Academic Efficacy; Educational Purpose; Joy of Learning; and School Connectedness	CFA: 4 factors ($\chi^2 = 161.43$, $df = 98$, $p < .001$, CFI = .972, RMSEA [90%CI] = .038 [.028, .049])	$H/\alpha \geq .70$	Perret et al. (2019), Renshaw (2015), Renshaw & Chenier (2018)
No-named (Askill-Williams et al., 2018)	Happiness at School School Satisfaction scale	Non specified CFA: CFI = .99, TLI = .98, RMSEA = .04, SRMR = .02	Non-specified H = .93	Askill-Williams et al. (2018)
Fragebogen zur Erfassung Emotionaler und Sozialer Schulerfahrungen von Grundschulkindern (Rauer and Schuck, 2004)	Seven scales: Social integration; class atmosphere; relation to the teachers; academic self-concept; achievement motivation; pleasure of learning; and school attitude	Non-specified	Non-specified	Klatte et al. (2010) Ehrhardt-Madapathi et al. (2018)
	Joy of learning subscale: happiness and positive emotions in school daily tasks and positive attitudes toward school tasks and school subjects	Non-specified	$\alpha = .64-.74^*$	
Primary School Upper Grade Students' Prosocial Behaviors Questionnaire (Feng, 2009)	4 subscales: altruistic Behavior; behavior abided by rules; social behavior; and otherness behavior subscale	CFA: 1 factor ($\chi^2/df = 4.61$, CFI = .97, TLI = .95, RMSEA = .07)	$\alpha = .87$ (T1), .90 (T2) and .92 (T3)	Chen et al. (2020)
			$\omega = .88$ (T1), .91 (T2) and .93 (T3)*	
			$\alpha = .94$ (T1)*	
Left-behind Children's Social Behavior Questionnaire (Chen, 2008)	Antisocial Behavior subscale	CFA: 1 factor ($\chi^2(4) = 20.30$, CFI = .99, TLI = .98, SRMR = .02, RMSEA = .07)*	$\alpha = .81^*$	Tian et al. (2018)
Strengths and Difficulties Questionnaire by teachers (Goodman, 1997)	Five subscales: emotional symptoms; conduct problems; hyperactivity-inattention; peer relationship problems; and prosocial behaviour subscale	Non-specified	$\alpha = .72-.90$	Ehrhardt-Madapathi et al. (2018)
Questionnaires sur les performances scolaires (Bacro et al., 2017)	Questionnaire sur les performances scolaires en français Questionnaire sur les performances scolaires en mathématiques	Non-specified	Non-specified	Bacro et al. (2017)
Survey questionnaire (Hossain, 2019)	The school satisfaction subscale of the Multidimensional Students' Life Satisfaction Scale	Quality of School Life Scale ($r = .68$)	$\alpha = .89$	Hossain et al. (2019)
	Experience with School Scale: perceived control at school, perceived academic support from teachers, perception of student-teacher relationships, perception of relationships with peers and perception of country support in education	Non-specified	$\alpha = .70-.90$	
International Survey on Children's Well-Being (The International Society of Child Indicators, ISCI, 2012)	Various instruments, not all specified (Overall Life Satisfaction Scale, Brief Multidimensional Student Life Satisfaction Scale, Personal Well Being Index School Children, etc.)	Non-specified	Non-specified	Alfaro et al. (2016)

Table 3.
Unidimensional instruments for quantitative measure of school well-being with different scales/subscales.

Instrument	Scale/subscale	Validity	Reliability*	Source	
Malleable Social-Psychological Academic Attitudes survey (Pyne et al., 2018)	School Trust scale	EFA: 6 factors (68% variance), CFA: 6 factors ($\chi^2 = 469.66$ [df = 137], CFI = .93, RMSEA = .05 [p = .83])	$\alpha = .74$	Pyne et al. (2018)	
	Social Belonging scale		$\alpha = .76$		
	Evaluation Anxiety scale		$\alpha = .79$		
	Self-Complexity scale		$\alpha = .69$		
	External Locus of Control scale		$\alpha = .83$		
School Bullying Risk Survey (Bochaver et al., 2019)	Identification with School scale	EFA: 4 factors (Non specified), CFA: 4 factors ($\chi^2 = 1928$, df = 2, CMIN/DF =.96, NFI =.98, CFI =1.000, RMSEA =.00)	$\alpha = .73$	Bochaver et al. (2019)	
	The insecurity scale: degree of normalization of disrespect, insecurity and disregard for rules and boundaries.		$\alpha = .60$		
	The wellbeing scale: stability of boundaries, compliance with rules and confirmation that group members respect each other.				
	The disunity scale: lack of cohesion		$\alpha = .67$		
Brief Adolescents' Subjective Well-Being in School Scale (Tian et al., 2015)	The equality scale: ability of the group members to accept differences, role distribution and to participate in constructive and positive communication	EFA: 6 factors (54.69% variance), CFA: 2 factors ($\chi^2 = 92.385$, df =19; TLI =.942, CFI = .961, RMSEA (90% CI) =.071[.057-.086], SRMR =.035)	$\alpha = .82$	Chen et al. (2020), Liu et al. (2021), Su et al. (2019), Tian et al. (2018), Tian et al. (2016), Tian et al. (2020), Yang et al. (2018), Yi et al. (2020)	
	Affect in School Subscale: positive and negative affects		$r_{xy} = .43-.71$ Non-specified		
	School Satisfaction Subscale: academic performance, school management, teacher-student relationships, peers' relationship, academic learning				
Elementary School Students' Subjective Well-Being in School Scale (Lin et al., 2015)	School Satisfaction Subscale: academic learning, achievements, school management, teacher-student relationship, peers' relationship, learning	EFA: 6 factors (68.01% variance), CFA: 6 factors ($\chi^2 = 510.824$, df =215), p\>.01, CFI =.96, RMSEA =.051, SRMR =.037), The School Subscale of the MSLSS ($r = .57$, p <.01)	Guttman =.72-.86, $\alpha = .70-.91$	Liu et al. (2015)	
	Positive Affect in School Subscale		EFA: 1 factor (65.42% variance), CFA: 1 factor ($\chi^2 = 26.63$, df =5, p\>.01, CFI =.96, RMSEA =.071, SRMR =.038), The Delighted Terrible Face Scale ($r = -.47$, p <.01)		Guttman =.71, $\alpha = .76$
	Negative Affect in School Subscale		EFA: 1 factor (67.07% variance), CFA: 1 factor ($\chi^2 = 16.84$, df =5, p>.01, CFI = .98, RMSEA = .067, SRMR = .022), DTFS ($r = .49$, p <.01)		Guttman =.78, $\alpha = .84$
Adolescent Students' Basic Psychological Needs at School Scale (Tian et al., 2014).	The Need for Autonomy subscale	CFA: 3 factors ($\chi^2 = 166.12$, df =87, p <.01, CFI =.98, NNFI =.97, RMSEA =.054, 90% CI [.042-.067], SRMR =.048)	Guttman =.77, $\alpha = .85$, $r_{xy} = .73$ (5 weeks)	Liu et al. (2021), Su et al. (2019), Tian et al. (2018)	
	The Need for Relatedness subscale		Guttman =.69, $\alpha = .80$, $r_{xy} = .71$ (5 weeks)		
	The Need for Competence subscale		Guttman =.61, $\alpha = .77$, $r_{xy} = .74$ (5 weeks)	Liu et al. (2021)	
Basic Psychological Needs Satisfaction in the Classroom Scale (Conesa and Duñabeitia, 2021)	Autonomy satisfaction subscale	CFA: 4 factors ($\chi^2 = 222.06$, p < 0.001, $\chi^2/df = 1.96$, CFI =.99, TLI =.99, SRMR =.04, RMSEA =.03)	$\alpha = .72$, $\omega = .72$	Conesa & Duñabeitia (2021)	
	Competence satisfaction subscale		$\alpha = .76$, $\omega = .76$		
	Relatedness satisfaction subscale		$\alpha = .78$, $\omega = .79$		
School Adjustment Scale (Congard et al., 2016)	Novelty satisfaction subscale	Non-specified	$\alpha = .78$, $\omega = .77$	Perret et al. (2019)	
	The Academic Adjustment subscale: academic outcomes, attention, autonomy, and motivation		$\alpha = .95^*$		
School Engagement Scale (Fredricks et al, 2005)	Cognitive engagement subscale	Non-specified	$\alpha = .81$ (T1) and .83 (T2)*	Yi et al. (2020)	
	Behavioural engagement subscale		$\alpha = .71$ (T1) and .73 (T3)*		
Achievement Goals Scale (Zhang et al., 1999)	The Mastery Goals subscale	Non-specified	$\alpha = .79$ (T1)*	Yi et al. (2020)	
	The Performance-Approach Goals subscale		$\alpha = .79$ (T1)*		
	The Performance-Avoidance Goals subscale		$\alpha = .68$ (T1)*		
Student-Teacher Relationship Scale (Koomen et al., 2007; Pianta, 2001)	The Conflict subscale	Non-specified	$\alpha = .88$ (Year 4), .88 (Year 5) and .85 (Year 6)*	Weyns et al. (2021)	
	Math performance tests		$\alpha = .89^*$		
Performance tests (LLECE, 2001)	Language performance tests	Non-specified	$\alpha = .92^*$	Murillo & Martínez (2018)	

*Extracted from the primary or secondary source analysed.

Table 4.
Multidimensional instruments for quantitative measure of school well-being.

Instrument	Dimensions	Validity	Reliability*	Source
High/low inference justice rating instrument provided by Teachers/Observers (Ehrhardt et al., 2016)	HIR_T_Appropriateness of praise and criticism	EFA: 3 factors (57% variance)	$\alpha = .61$	Ehrhardt-Madapathi et al. (2018)
	HIR_T_Adaptive learning settings		$\alpha = .61$	
	HIR_T_Rnsuring learning opportunities		$\alpha = .61$	
	HIR_O_Adaptive learning settings	EFA: 3 factors (46% variance)	$\alpha = .60$	
	HIR_O_Respectful teacher interaction		$\alpha = .44$	
	HIR_O_Appropriateness of praise and criticism		$\alpha = .41$	
	LIR_O_Supportive performance feedback	EFA: 4 factors (53% variance)	$\alpha = .61$	
	LIR_O_Enforcing class rules		$\alpha = .87$	
The well-being questionnaire (Sabri et al., 2015)	LIR_OLIR_Respectful interactions		$\alpha = .44$	Astolfi et al. (2019)
	LIR_OLIR_Acceptance of the child		$\alpha = .42$	
	Self-esteem; emotional health; relationships at home and with peers; enjoy at school; happiness scale	Non-specified	$\alpha = .69^*$	
Questionnaire multidimensionnel de bien-être à l'école (Guimard et al., 2015)	Satisfaction with school activities	Convergent validity: school satisfaction =.33-.46, Divergent validity: progressive matrix = 0-.09	$\alpha = .71-.72, r_{xy} = .70-.75$	Bacro et al. (2017)
	Relationship with teachers	Convergent validity: school satisfaction =.37-.40, Divergent validity: progressive matrix =.05-.16	$\alpha = .65-.70, r_{xy} = .50-.64$	
	Satisfaction with the classroom	Convergent validity: school satisfaction =.29-.36, Divergent validity: progressive matrix =.02-.18	$\alpha = .62-.68, r_{xy} = .50-.74$	
	Relationship with peers	Convergent validity: school satisfaction =.05-.20, Divergent validity: progressive matrix = 0-.07	$\alpha = .75-.78, r_{xy} = .70-.71$	
	Feeling of safety	Convergent validity: school satisfaction =.02-.16, Divergent validity: progressive matrix =.0-.06	$\alpha = .72-.76, r_{xy} = .05-.42$	
	Relationship with assessment	Convergent validity: school satisfaction =.05-.10, Divergent validity: progressive matrix = .04-.06)	$\alpha = .63-.73, r_{xy} = .65-.68$	
No-named (Fanchini et al., 2019)	School well-being (negative emotion; engagement; competency; positive emotion)	CFA: RMSEA =.03; CFI, TLI =.97	KR-20=.33-.56	Fanchini et al. (2019)
	Creativity at school (interest in new things and intrinsic motivation)		KR-20=.50-.64	
No-named (Buda and Szirmai, 2010)	Children's sense of well-being at school (mood at school, occurrence of psychosomatic symptoms and attitudes towards school)	Non-specified	$\alpha = .81$	Buda & Szirmai (2010)
No-named (Conboy et al., 2015)	Valorização pessoal/intrinseca	EFA: 3 factors (51.3% variance), CFA: $\chi^2 = 3.49 (p = .073)$, CFI =.99, PNFI = .62, RMSEA(90% IC) =.034, RMSEA ($p < .05$) =.85	$\alpha = .74$	Conboy et al. (2015)
	Valorização no sentido prático//utilitarista		$\alpha = .80$	
No-named (Fouquet-Chauprade, 2011)	Sentimentos de Pertença e Bem-Estar		$\alpha = .78$	Fouquet-Chauprade (2014)
	School and class environment; relations between the students, with the teachers and with other adults of the school institution; image; and reputation of the school, the students, and the neighbourhood	Non specified	Non specified	
No-named (Thoonen et al., 2011)	Student motivation (well-being in class, well-being at school, academic self-efficacy, intrinsic motivation, mastery goals, and performance-avoidance goals); and student behaviour (school investment)	OFA: non-specified	$\alpha = .59-.81$	Thoonen et al. (2011)
	Teaching practice (process-oriented instruction, connection to the world of students, cooperative learning, and differentiation); and teacher self-efficacy	OFA: Non-specified	$\alpha = .73-.81$	Thoonen et al. (2011)

Table 4.*Multidimensional instruments for quantitative measure of school well-being.*

Instrument	Dimensions	Validity	Reliability*	Source
Students' Social Wellbeing at School questionnaire (Moliner et al., 2020)	Achievement; cooperation; cohesion; coexistence; attitude towards school; attitude towards diversity; solidarity	EFA: 7 factors (53.9% variance), CFA: 7 factors (CFI =.92, GFI =.90, $\chi^2/df = 2.13$, RMR =.05).	$\alpha = .91$, $r_{xy} = .70$, Guttman =.67	Chiva-Bartoll et al. (2020)
Cuestionario de clima social del aula (Pérez et al., 2010)	Relationship; communication; interest; satisfaction	Experts' judgement	Non specified	Filella et al. (2016)
Cuestionario del clima del patio (Filella et al., 2016)	Four non-specified dimensions.	Experts' judgement	$\alpha = .84$	Filella et al. (2016)
The noise questionnaire (Henze, 2006)	Noise inside the classroom; noise from outside	Non-specified	Non-specified	Klatte et al. (2010)
The noise questionnaire (adaptation) (Astolfi et al., 2019)	Perceived disturbance from specific noise sources; perceived intensity and disturbance of noise during school activities carried out in silence or in a group; and perceived voice quality while a classmate asks a question and while the teacher explains	Non-specified	$\alpha = .71$	Astolfi et al. (2019)
No-named (Dettmers et al., 2019)	Effective family-school communication; parental participation in homework. Well-being (at home and at school); and school achievement (in mathematics and in language)	Non-specified	$\alpha = .74-.95$	Dettmers et al. (2019)
Youth's Risks and Assets Survey (Renshaw, 2015)	Risks: reception of aggression, perpetration of aggression, substance use, self-harm, and languishing effect. Assets: reception of social support, provision of social support, physical exercise, participation in enjoyable activities, and prosperous effect.	Non-specified	Non specified	Renshaw (2015)
No-named (Mooij et al., 2011)	Perception of safety in school; unacceptable behaviour; harassment of students; and perceived need for additional interventions to improve social safety in and around the school.	Non-specified	$\alpha = .61-.97^*$	Nelen et al. (2021)
No-named (Anderson and Graham, 2016)	Conceptualization of well-being; importance of relationships; have a voice and recognition (peers and teachers) in well-being.	Non-specified	$\alpha = .70-.92$	Anderson & Graham (2016)
Índice General de Satisfacción por Ámbitos (Casas et al., 2013)	School	Non-specified	$\alpha = .78^*$	Alfaro et al. (2016)
Test de autoconcepto (Murillo and Martínez, 2018)	Academic self-concept (reading, mathematics, and general school self-concept); non-academic self-concept (scale of physical abilities, physical appearance, peer relations and relations with parents) and general self-concept	Non-specified	$\alpha = .94$	Murillo and Martínez (2018)

*Extracted from the primary or secondary source analysed.

Twenty-one qualitative instruments developed ad hoc were found (Table 5), in which the use of interviews stood out. Eight of them were focused on school well-being (Anderson & Graham, 2016; Kellock, 2020; Kutsar et al., 2019; Roffey, 2008; Simmons et al., 2015; Stasulane, 2017), while the rest studied one dimension: social well-being (Chiva-Bartoll et al., 2020), basic psychological

needs (Holt et al., 2019), pleasant and unpleasant situations (Ramírez-Casas & Alfaro-Inzunza, 2018), meaningful situations (Bergmark & Kostenius, 2018), variables in class sessions (Murillo & Martínez, 2018), conflicts in recess (Filella et al., 2016), activities in class and at recess (Holt et al., 2019), school improvement (Backman et al., 2012) and happiness (Backman, 2016).

Table 5.
Qualitative instruments for measuring school well-being.

Instrument	Contents	Source
Pupils focus groups (Anderson and Graham, 2016)	Well-being (pupils' individual definitions; who they perceive as support networks; discussions about how they feel to be cared for, respected, and valued; imagining an ideal school that would support their well-being).	Anderson & Graham (2016)
Pupils focus groups (Chiva-Bartoll et al., 2020)	Service-learning experience on social well-being.	Chiva-Bartoll et al. (2020)
Focus group discussions (Stasulane, 2017)	School well-being and its dimensions.	Stasulane (2017)
Semi-structured interviews with focus groups (Simmons et al., 2015)	School well-being (definition; who they consider as sources of support; how the concept of recognition is perceived in relation to well-being; what an ideal school for well-being would be like).	Simmons et al. (2015)
Semi-structured interviews with focus groups (Kutsar et al., 2019)	Well-being at school (learning environment, bullying among peers, what they would like to change at school...).	Kutsar et al. (2019)
Semi-structured interviews with focus groups (Holt et al., 2019)	Autonomy, competence, and relationship.	Holt et al. (2019)
Semi-structured interviews with focus groups (Ramírez-Casas and Alfaro-Inzunza (2018)	Pleasant/unpleasant situations in the school experience.	Ramírez-Casas and Alfaro-Inzunza (2018)
Semi-structured interviews with focus groups (Bergmark and Kostenius, 2018)	Significant situations at school.	Bergmark & Kostenius (2018)
Individual interviews (Stasulane (2017)	Daily life.	Stasulane (2017)
Semi-structured interviews with pupils, teachers, school principals and counsellors (Roffey, 2008)	School well-being (feelings about school and how the school ethic contributed to their own and others' well-being, how people's feelings are considered, what helps people get along, how and by whom school culture changes).	Roffey (2008)
Semi-structured interviews with teachers and school principals (Anderson and Graham, 2016)	Well-being (how they define it, whether and to what extent educational policy shape their understanding and approach, how they perceive that well-being is facilitated in their schools, the impact of leadership on school well-being, the relationship between teacher and student well-being and how the concept of recognition is perceived in relation to well-being).	Anderson & Graham (2016)
Semi-structured interviews with teachers (Chiva-Bartoll et al., 2020)	Programme and its impact on factors related to the pupils' social well-being.	Chiva-Bartoll et al. (2020)
Classroom checklist (Murillo and Martínez (2018)	Stable or objective variables (size, luminosity, cleanliness, etc.) before the sessions, activities during a class hour and elements and variables during a session.	Murillo & Martínez (2018)
Anecdotic record of problematic behaviours in courtyard (Filella et al., 2016)	Conflicts during recess.	Filella et al. (2016)
Field diary (Holt et al., 2019)	Activities controlled by the teacher within the lessons and voluntary activities during recess.	Holt et al. (2019)
Written reflections from students (Backman et al., 2012)	How they would make school the best place to learn.	Backman et al. (2012)
Written reflections from students (Backman, 2016)	Good experiences at school and how they would make school the best place to learn.	Backman (2016)
Field diary, digital narrative, posters, role-playing, and drawings (Bergmark and Kostenius, 2018)	Significant situations at school.	Bergmark and Kostenius (2018)
Drawings, maps, photographs, notes and discuss transcriptions (Kellock, 2020)	School well-being status.	Kellock (2020)

Discussion and conclusions

This research deeply analysed the scientific literature on the measurement of school well-being in primary and lower secondary school students to find answers to the research questions formulated through the PICO strategy. Its research spans the globe, highlighting the primary and lower secondary education stage in China, France, and Sweden. Spain is below them. Note that other stages may show different results, as noted by Losada-Puente et al. (2022). For example, it is striking that Australia has a low ranking, given the importance that its educational and non-educational policies give to childhood school well-being (Simmons et al., 2015).

In response to our first objective, which was to explore, through the scientific literature, the instruments for assessing school well-being, a former finding reinforces the initial hypothesis regarding the lack of definition of the construct of school well-being, with the consequent limitations when it comes to operationalising it. In spite of the most recent evidence pointing to the predominant multidimensional operationalisation of school well-being, integrating scales/subscales (Renshaw, 2015), there is no consensus on the determination of the dimensions that make it up, sometimes leading to partial or perhaps incomplete assessments. This seems problematic because it keeps open the debate about what we mean by school well-being and how to measure it accurately.

In addition to this lack of specificity in the definition of its components or dimensions, in response to the second objective of the present study, which was to identify the type of measures - direct or indirect - of the construct, we have found a tendency to equate it with related but not equivalent constructs (e.g. satisfaction with school life, school engagement, peer relations, feelings of belonging to school, etc.). Previous studies propose a holistic assessment (Fanchini et al., 2019; Konu & Rimpela, 2002), combining different points of view (Stasulane, 2017), namely: subjective, psychological, and social (Losada-Puente et al., 2022).

Focusing attention on examining the place of student voice in the design of instruments for measuring student well-being in schools, as the third objective of this study, we found a predominance of quantitative measures allows school well-being to be quantified objectively and comparably, resulting in useful information for educational research and practice; nevertheless, the design of these instruments may be questioned. Students' feelings and perceptions towards school experience can be explored in many ways, such as surveys, metaphors, drawings, etc. (Cevikbas, 2021), but certainly the beginning for the design of an instrument should be the voice of the students (Anderson & Graham, 2016; Stasulane, 2017; Bergmark & Kostenius, 2018) as paying attention to

their point of view represents the improvement of education policy and practice around student well-being in schools (Simmons et al., 2015). Starting from a qualitative study - as observed in current research trends (Chiva-Bartoll et al., 2020; Enriquez et al., 2022; Filella et al., 2016; Kellock, 2020; Mendiri et al., 2024) - is an extremely interesting resource to find out first-hand what students think about their school experience, what they consider important, and how they define what it means to feel good at school.

Finally, the aim was to reflect in depth on the characteristics of the instruments designed so far and their suitability for the assessment of well-being from a broad view of the concept. This paper reflects the complexity underlying the operationalisation of student well-being. Different ways of assessing the construct are indicative of the variety of ways of conceptualising it. The risk lies in unnecessarily confounding the construction of instruments (Hussain et al., 2023) or even in generating narrow lines of enquiry by omitting other important domains in light of the most recent findings in the field. Do not forget that the way each student perceives and lives their experiences in the school space are different and significant, which prevents us from referring to a single and common way of expressing what it means for them to be well at school, although it is possible to delimit some axes of influence on the child's school life (Requejo et al., 2022) at a subjective, psychological and social level (Losada-Puente et al., 2022). This has also been a limitation of the present study, justified by the decisions taken to organise and group too complex and varied information. This has been resolved by triangulating each phase of the analytical process between researchers, thus reducing the risk of bias in the inclusion/exclusion of studies. Other limitations worth mentioning are the conceptualisation of the educational stage concerning 6-12 years in different countries around the world, and the language bias, by discarding studies that were not published in English, Spanish, French or Portuguese. The profuse scientific production in China raises the possibility of losing information published in this language.

Despite these limitations, relevant conclusions with scientific and practical implications for the study of school well-being are derived: (a) it should be studied from a multidimensional and holistic approach, incorporating the traditional subjective and psychological perspectives, alongside the social perspective (Losada-Puente et al., 2022), which highlight the relevance of relationships with peers and other educational agents in the school space (Chen et al., 2020; Bochaver et al., 2019; Su et al., 2019; Weyns et al., 2021); and (b) it should be measured through students perceptions, considering their voice and opinion on what is important to them (Bergmark & Kostenius, 2018; Enriquez et al., 2022; Holt et al., 2019;

Mendiri et al., 2024; Requejo et al., 2022; Simmons et al., 2015). Continuing this line of research will make it possible to establish a list of indicators of what is important in their school experience, leading to the construction of an instrument of school well-being from a holistic perspective.

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