

Tools for assessing students' socio-emotional competencies. A systematic literature review

Ioana Alexandra Negru*, Ramona Palos**

Abstract

Social-emotional competencies (SEC) represent an increasingly investigated topic in the educational context, and multiple tools have been developed to measure them. Consequently, an inventory of these tools becomes necessary for research in different educational contexts. This paper aimed to identify and analyse the existing self-reported instruments used to assess secondary school students' SEC, developed on the CASEL model and published between 2018-2022. The CASEL model was created to help design and conduct SEC development programs and focus on five dimensions: self-awareness, self-management, social awareness, managing relationships with others, and responsible decision-making. Most of the social-emotional learning programs are therefore based on the CASSEL framework. Three academic databases were searched (Google Scholar, ERIC, and ProQuest), and 1246 articles were identified. After checking the inclusion criteria, fourteen articles were included in the quantitative synthesis. Finally, eight questionnaires assessing the five SEC dimensions according to the CASEL model were identified. From this analysis, a questionnaire was noted that covers all five dimensions (i.e., the Social and emotional competencies questionnaire built by Zhou & Ee, 2012), has a relatively low number of items, and is easy to apply to children and adolescents. In addition to this questionnaire utility, developing new SEC measurement tools created on the CASEL model to offer variety remains necessary. The results of the literature review present all eight questionnaires with the dimensions they measure, the number of items, and their internal consistency. Also, this study illustrates the limitations of such a review and suggestions for future research.

Keywords: socio-emotional competencies, secondary school students, CASEL model, questionnaire.

1. Introduction

Being essential not only for physical and mental health (Ciarrochi et al., 2003; Espejo-Siles et al., 2020) but also for academic and life success (Domitrovich et al., 2017), socio-emotional competencies (SEC) have become a topic of interest in educational research (Blewitt et al., 2018; Durlak et al., 2011). For instance, previous evidence emphasized the

* Ph.D. Student, West University of Timisoara, Faculty of Sociology and Psychology, ioana.negru97@e-uvt.ro

** Associate Professor, Ph.D., West University of Timisoara, Department of Psychology, corresponding author: ramona.palos@e-uvt.ro



predictive value of SEC in academic performance (Portela-Pino et al., 2021) and learning engagement (Greenberg, 2023), reading and math success (Oberle et al., 2014), social adjustment (Domitrovich et al., 2017; Nakamichi et al., 2021), or reducing emotional distress (Greenberg, 2023).

Considering SEC as skills that need to be developed like any other academic skill (Aguilar et al., 2019), there was a need to properly define them to allow suitable assessment and designing efficient social-emotional learning programs (SEL). According to the CASEL model (Collaboration for Academic, Social and Emotional Learning), created to aid in children's holistic development and support the adequate implementation of SEL, SEC have been characterized as "a set of skills, including recognizing and managing our emotions, developing care and concern for others, establishing positive relationships, making responsible decisions and handling challenging situations constructively and ethically" (CASEL, 2008, apud Zhou & Ee, 2012, p. 27). Thus, socio-emotionally competent people successfully recognize their emotions, understand, and manage them effectively in relationships with others, and can adapt to the complexity of social situations (Oberle et al., 2014).

Implementing effective SEL programs based on the CASEL framework requires tools that capture the accurate level of development of each dimension stipulated by the model. While documenting the article, it was found that many instruments measure one or more aspects of SEC, depending on the theoretical approach, but only some instruments cover them all. Consequently, *this systematic literature analysis aimed to investigate the most frequent self-reported tools used for measuring SEC for secondary school students (aged between 12-15 years), according to the CASEL framework.* A similar analysis was made by Muller et al. (2020), but they used different samples (i.e., students and staff from secondary school) and repertoire of skills (i.e., emotional, social, and intercultural competencies). This age range was chosen because it represents a critical stage in teenagers' life, with considerable physical, emotional, cognitive, or behavioral changes (Oberle et al., 2014). All these transformations impact how they adapt to the specific school and social environment. Moreover, during this time, teenagers try to understand themselves better, and their capacity for self-evaluation improves (Oberle et al., 2014). Because more and more emphasis is placed on identifying the children's perspective on their level of SEC development (Humphery et al., 2011), only self-reported instruments were chosen. In cases when other people (e.g., teachers or parents) make the assessment, the outcomes may be different as a consequence of the diverse environments in which they observe and interact with children (Im et al., 2019; Martinsone et al., 2022; Oberle et al., 2014; Schonmoser et al., 2022). This paper was organized into the following steps. First, a brief theoretical background of the CASEL model and the kind of skills included under the cluster of social-emotional competencies (SEC) was presented. Second, the

specialized literature from the last 5 years (2018-2022) was analysed to identify the research tools used to measure SEC. After that, the article selection procedure and the results and discussion were described.

1.1 Theory

According to the CASEL model, SEL is essential for human development (Goleman et al., 1994), supporting people in acquiring and applying knowledge and skills that help them deal with emotions, organize their actions to achieve goals, analyse the consequences of their decisions, create, and maintain healthy relationships with those around them (Greenberg, 2023). Considering SEC as a “*set of skills, behaviors, and attitudes that people need to effectively manage their affective, cognitive, and social behavior*” (Yoder, 2014, p. 2), the CASEL model divides them into intra-personal and interpersonal competencies (Domitrovich et al., 2017; Zhou & Ee, 2012). Intrapersonal competencies refer to people’s ability to understand and control their emotions through *self-awareness* (the capacity to make a correct assessment of weaknesses and strengths, to set realistic goals, to understand one’s feelings and behaviors and how they are interconnected; Greenberg, 2023) and *self-management* (the ability to handle thoughts, emotions, and behaviors to achieve the established goals; Denham et al., 2014). *Interpersonal competencies* are linked to the capacity to understand others’ emotions (i.e., *social awareness*), build and maintain healthy relationships (i.e., *managing relationships with others*), and make responsible decisions grounded on the analysis of benefits and consequences for oneself and others (i.e., *responsible decision-making*; Domitrovich et al., 2017; Frey et al., 2000; Zhou & Ee, 2012).

Previous research has highlighted SEC's importance for students' well-being (Bhat & Chahal, 2022; Ghamary et al., 2022) and adaptation to the educational environment (Poulou, 2019), motivation for learning (Wirajaya et al., 2019), or academic performance (Zuraida & Suganda, 2021). Some studies have emphasized the value of parental help in creating opportunities for children to learn SEC (Milers et al., 2018), showing that maternal stress is negatively associated with SEC in children (Cucinella et al., 2022). Likewise, the significant role of teachers' support in growing students' SEC was highlighted (Luo et al., 2021; Supriatna et al., 2022; Hachem et al., 2022).

To develop SEC is necessary to know the level of these abilities and to create conditions to apply them in different situations and contexts to lead to long-term improvements in various areas of children's development (Greenberg et al., 2017). Although there are considerable studies on SEL programs (e.g., Durlak et al., 2011; Taylor et al., 2017; Durlak et al., 2022), the same cannot be said about the inventory of tools used to measure SEC. In their systematic review, Humphery et al. (2011) obtained a list of 12 instruments that can be used to measure SEC; three have versions that can be applied to children, parents, and teachers, and five of them only to children. The authors assert that

the development of SEC measurement tools is slower than the growing interest in SEL. In another recent systematic literature review, Muller et al. (2020) analysed the articles published between 2000-2017 to identify the tools used to measure the social and emotional competencies of pupils from preschool. They found 26 instruments for social competencies, 11 for emotional competencies, and 47 measured both competencies simultaneously. Compared to the dimensions proposed by the CASEL model, only personal and social awareness, self-management, and relationship skills were evaluated, the others generally focusing on personality and health aspects. Starting from these results, this literature review aimed to analyse studies published after 2017 that used only questionnaires based on the CASEL model.

2.1 Objectives

This systematic literature review aimed to identify and analyze the existing self-reported instruments used to assess SEC of secondary school students (aged between 12-15 years), tools based on the CASEL framework. In this sense, the research sought to answer the following question: *What are the main self-reported tools for measuring the SEC of secondary school students, based on the CASEL model, that can provide the information needed to design SEL programs?*

2.Methods

2.1 Inclusion criteria

For an article to be included in the study, it was required to meet the following criteria: (a) to be written in English; (b) published between 2018-2022 in peer review specialized journals; (c) to include only participants who are secondary school students (aged between 12-15 years); (d) to be a correlational or quasi-experimental study; (e) to include self-report instruments developed based on the theoretical approach of *the CASEL model*.

2.2 Search strategy and selection of studies

Databases search: To conduct the systematic literature review, three databases were used: ERIC (Education Resources Information Center), ProQuest, and Google Scholar.

Search terms: Several keywords relating to measurement (e.g., "assessment", "measure"), cognition ("social AND emotional"), instruments ("self-report", "questionnaire"), and other actors groups (adolescents and teenagers) were combined to identify the instruments.

Table 1. Fields and search terms

Field	Operator	Keywords
Measurement	AND	"assessment" or "measure"
Cognition	AND	"social AND emotional" OR "self-management" OR "self-awareness" OR "managing relationship" OR "responsible decision making"
Instruments	AND	"self-report" OR "questionnaire"
Intended actors	AND	"adolescents" OR "teenagers" OR "13-year-old" OR "14-year-old" OR "15-year-old" OR "7th grade" OR "8th grade"
Irrelevant fields	NOT	teaching OR covid-19 OR families & family life OR teachers OR qualitative research OR mental disorder OR pandemics OS anxiety OR higher education OR systematic review OR literature review OR nurses OR colleagues & universities OR public health OR college students OR medical personnel OR older people OR mother OR autism OR young adults OR burnout OR pediatrics OR adults OR hospital

2.3 Study selection

After all the articles had been downloaded, the selection process began. 1246 articles were identified, but 13 duplicate documents were removed. 1233 articles left to read the title and abstract. After this process, 1032 were eliminated because they did not address the concept of SEC. After full reading, a further 187 articles were excluded because they did not correspond to the selection criteria: 11 – were not in English; 49 – were not correlational or quasi-experimental studies; 15 – did not use self-report instruments; 38 – the participants were not between 12-15 years of age; 35 were not peer-reviewed, and 53 were not based on the CASEL model. After completing this stage, 14 articles remained and were included in the quantitative synthesis.

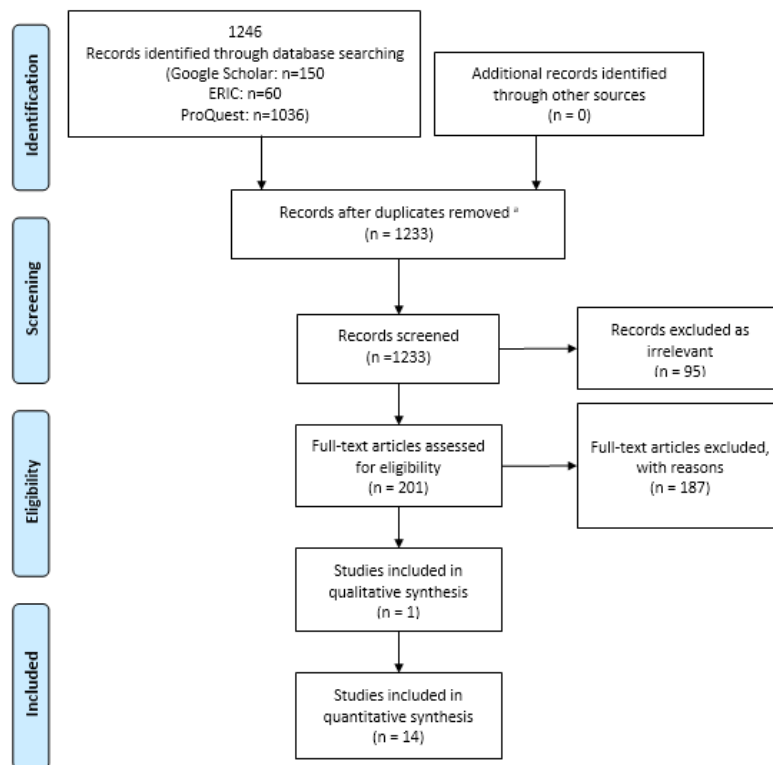


Figure 1. The flowchart of the selection process

2.4 Data analysis

The fourteen founded articles were organized according to the instruments they used to assess SEC, emphasizing the presence of the five dimensions and the number of items.

3.Results

After reading the fourteen final articles, a list of instruments was created. Table 2 presents each questionnaire and the authors who developed them, the measured dimension from the CASEL model perspective, the number of items, and their citation frequency in the specialized literature. Cronbach's Alpha values were taken from the studies included in the analysis. Thus, the final analysis found eight questionnaires: seven assessed all the five dimensions stipulated by the CASEL model, and one of them measured only two dimensions, self-management, and social awareness, respectively.

Table 2. Distribution of the self-reported instruments identified through the systematic literature review

	Tool	Author, Year	Type	No of citation	SA	SM	SoA	MRO	RDM	No of items	α	Studies found
1	Questionnaire adapted from Yoder, (2014)	Yoder (2014)	Scaled Quest.	253	x	x	x	x	x	62	0.84	Anisa et al., (2019)
2	Social and emotional competences questionnaire	Zhou & Ee (2012)	Scaled Quest.	116	x	x	x	x	x	25	0.72 – 0.93	Zahid et al., (2021); Bhat & Chahal, (2022); Wirajaya et al., (2019); Dinh et al., (2021); Ghamary et al., (2022); Qayyum & Hussain, (2019); Portela-Pino et al., (2021)
3	Social and Emotional Competences Scale	Zych et al., (2018)	Scaled Quest.	75	x	x	x	x	x	16	0.91	Ismail & Alyami, (2021)
4	Social Skills Improvement System, Social Emotional Learning Edition Brief Scales – Student Form (SSIS-SELb-S)	Anthony et al., (2020)	Scaled Quest.	23	x	x	x	x	x	20	0.91	Cefai et al., (2022)
5	Social-Emotional Learning Scale	Totan (2018)	Scaled Quest.	10	x	x	x	x	x	23	0.82	Temircan, (2022)

6	Social and emotional function test	Kwon (2011)	Scaled Quest.	16	x	x	x	x	x	52	0.97	Song & Kim, (2022)
7	Social and Emotional Learning Scale	Fernández-Martín et al., (2022)	Scaled Quest.	3	x	x	x	x	x	30	0.82	Fernández-Martín et al., (2022)
8	CORE	CORE (2017)	Scaled Quest.			x	x			18	0.85 & 0.81	Soland et al., (2022)

Note: SA = Self-awareness; SM = Self-management; SoA = Social awareness; MRO = Managing relationships with others; RDM = responsible decision-making.

A questionnaire adapted from Yoder (2014) was the most cited instrument in Google Scholar (253 times), but in this analysis, it has been used in one research. It is also quite difficult to apply because of the high number of items (62). The original version of Yoder's questionnaire (Yoder, 2014) is called "*Self-Assessing Social and Emotional Instruction and Competencies: A Tool for Teachers*" and helps teachers analyse and reflect on their teaching practices and SEC. It is based on the five CASEL concepts and has two scales: *Social Teaching Practices* and *Instructional Teaching Practices*. *Social Teaching Practices* have questions about student-centered discipline, teacher language, responsibility and choice, warmth, and support. *Instructional Teaching Practices* cover aspects of cooperative learning, classroom discussions, self-assessment and self-reflection, balanced instruction, academic press and expectations, and competence building.

The *Social and Emotional Competence Questionnaire* (SECQ – Zhou & EE, 2012) has 116 citations in different studies, and this analysis found seven studies. It includes 25 questions structured in 5 subscales according to the CASEL model and assesses children's behavior in family, school, and community contexts, and can be applied to children from 3rd grade to 12th grade. Answers are given on a Likert scale from 1 ("not at all true of me") to 6 ("very true of me").

The *Social and Emotional Competences Scale* is a 16-item instrument developed by Zych et al. (2018), cited 75 times in the literature. The first version of the questionnaire included 50 items, but the final version had only 16 items, and the answers were given on a 5-point Likert scale (from "strongly disagree" to "strongly agree"). The instrument is easy to apply and includes four subscales: self-awareness, self-awareness and motivation, social awareness and prosocial behavior, and responsible decision-making.

The *Social Skills Improvement System, Social Emotional Learning Edition (SSIS-sel) Student Form* (Anthony et al., 2020) has 23 citations and includes 20 items. This scale was built based on the CASEL model, created specifically to measure social and emotional learning in the case of intervention research. The students need to answer on a 4-point Likert scale (from "not true" to "very true"). Also, this instrument is an adaptation of the SSIS SEL Brief Scales - Student Form, a shorter version.

The *Social-Emotional Learning Scale* was developed by Totan (2018) and cited only ten times. The scale was designed specifically for teenagers and had all five dimensions from the CASEL model. The scale is made of 23 items and five sub-dimensions, and the answers are given on a 5-point Likert.

The *Social and emotional function test* was developed by Kwon (2011) based on the CASEL model, includes 52 items, and was cited 16 times. This questionnaire was developed on the Korean population of students and adolescents to understand emotions and resilience. It includes four subscales: social competence, emotional regulation, empathy, and self-esteem. Responses are based on a four-point Likert scale from "not at all" to "always".

The *Social and Emotional Learning Scale* was created by Fernández-Martín et al. (2022) to measure social-emotional skills. The instrument is based on the CASEL model and includes 30 items. So far, it is not very well known and has only three citations.

The *CORE* platform offers several scales, two of which assess, according to the CASEL model, the dimensions of self-management and social awareness through 18 items.

4. Discussion

This systematic literature review aimed to identify and analyse the existing self-reported instruments used to assess SEC of secondary school students (aged between 12-15 years), based on the CASEL model. According to our results, the number of instruments measuring SEC is low, although the interest in developing and analyzing SEL programs is significantly increased. Thus, eight questionnaires were identified, and the SECQ (Zhou & Ee, 2012), based on the CASEL framework, has been used significantly more than the rest of the instruments over the last five years (116 citations in Google Scholar). The clear structure, the relatively small number of items (25 items distributed on five items for each subscale) that allows for less time to fill out, and the free access made it increasingly used in the educational field to evaluate SEC. Furthermore, a brief examination of the Google Scholar database revealed that the SECQ was applied with a higher frequency to students aged between 12–15 years and a lower frequency in the age range of 7–8 and 17–18 years. The other identified tools can also be helpful in certain situations, even if some have too many items (Yoder, 2014 - 62 items, or Zych et al., 2018 - 50 items), which require a longer time to fill out, have a low number of citations in Google Scholar, indicating less frequent use (e.g., Kwon, 2011), or do not cover all five dimensions of the CASEL model (e.g., CORE).

A possible explanation for the reduced number of the identified tools could be related to the inclusion criteria: the conceptual framework for defining SEC, the subjects' age, and the type of questionnaires. Thus, only the instruments built on the CASEL model were considered, this being the framework most frequently used in the design of SEL programs. For example, Muller et al. (2020) obtained a list of tools that highlighted a combination of different measured dimensions included in the SEC category (e.g., student engagement, academic self-efficacy, goal-oriented behavior, self-regulation, self-discipline, or emotional intelligence). Unfortunately, only a few of these tools targeted some of the dimensions proposed by the CASEL model and defined according to it, but none on all five. The literature review included only publications up to 2017, while the current analysis adds studies published between 2018-2022. This allowed the list to be completed with other tools that contribute to identifying the level of SEC development, based on which SEL programs can be designed, the essential purpose of which is to improve the SEC. Another literature review identified and analyzed the questionnaires that were based on Denham's model (2005, as

cited in Humphrey et al., 2011) in which SEC included two kinds of skills (Humphrey et al., 2011): emotional competence skills (self-awareness, self-management, social awareness) and relational/prosocial skills (social problem solving; relationship skills). The first three emotional competence skills are also found in the CASEL model, the first two as intrapersonal competencies and the last as interpersonal competence. "Relational/prosocial skills" can be compared to "managing the relationship with others" because it refers to cooperation between colleagues, listening skills, or help-seeking. In contrast, for the "social problem-solving skills", we can talk of correspondence with the "responsible decision-making" dimension from CASEL only if it is seen as a skill that influences people's adaptive functioning in the real-life social environment.

Regarding the age of subjects, many studies and literature reviews focus only on preschoolers (e.g., Blewitt et al., 2018), while the present research was limited to secondary school students. This age range was chosen because young people are now experiencing challenging transformations, specific to the pre-and adolescent period (Durlak et al., 2022; Oberle et al., 2014), where a high level of SEC development can be quite valuable for adapting to the social environment, whether we are talking about school, group of friends or community (Durlak et al., 2022; Martinsone et al., 2022).

Concerning the type of tools, all the selected instruments are self-report measures. Some researchers claim that in the case of self-reported questionnaires, the responses can be influenced by the reduced introspective capacities of the participants (Chambers & Windschitl, 2004), which could affect the answers' accuracy. On the other hand, the children's perception of SEC development is essential for their growth and the aspects on which the SEL program will focus (Humphrey et al., 2011). When the teachers or parents are asked about the children's SEC, the answers may be influenced by the environment in which they are observed and spend more time generating discrepancies with self-assessment (Schonmoser et al., 2022; Im et al., 2019).

Limitations and perspectives

The current literature review has several limitations. First, the number of analysed databases is quite small, limited to Google Scholar, ERIC, and ProQuest. If other databases had been searched, more results would have been identified. Second, it is also possible that the keywords used in the articles search were insufficient. Third, the investigation based only on the CASEL framework reduced the number of instruments used in measuring the SEC level. Thus, the different perspectives of approach and definition of SEC caused essential instruments to have been omitted through the inclusion criteria. Despite these limitations, our results add new information to the existing literature on SEC measurement tools based on the CASEL model, with an essential impact on the design of programs to develop these competencies (i.e., SEL programs).

5. Conclusion

Previous research illustrated different types of instruments to measure SEC based on the CASEL model. The SECQ has been much more widespread among researchers in recent years than other instruments. Being easy to apply, this questionnaire can be suitable for secondary school students as a first step in identifying the level of SEC, followed by the design of a SEL program. Moreover, following the factor analysis, a shortening of the instrument can facilitate further its use in research that explores different variables shaped by the level of SEC. At the same time, developing other SEC evaluation tools is recommended to have a greater variety in this field.

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