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## Social and Emotional Competencies of Polish Pupils: Psychometric Properties of the Polish Version of the Social and Emotional Competencies Questionnaire (SEC-Q)

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### Abstract

**Objectives of the research:** Social and emotional competencies are crucial predictors of effective human psychosocial functioning. Although research on social and emotional competencies has been carried out for many years almost worldwide, in the current era of rapid social changes, further research is necessary. Thus, it is still essential to validate international questionnaires to measure social and emotional competencies in different geographic areas, including Poland. This would make it possible to study the dynamics of the development of these competencies and to conduct comparative studies between different countries. Therefore, the aim of the study was to validate the Social and Emotional Competencies Questionnaire (SEC-Q) in Poland.

**Research methods:** This study was conducted with the Social and Emotional Competencies Questionnaire (SEC-Q).

**A short description of the context of the issue:** The Social and Emotional Competencies Questionnaire (SEC-Q) was completed by 1,052 students aged 9 to 16. The psychometric properties of the SEC-Q were tested through Confirmatory Factor Analysis (CFA).

**Research findings:** The results showed that the SEC-Q has good psychometric properties and, as in its original version, it includes four components: self-awareness, self-management and motivation, social-awareness and relationship skills, and responsible decision-making.

**Conclusions and recommendations:** Validation of the SEC-Q will allow for more research on social and emotional competencies in Poland, including an evaluation of programs for increasing social and emotional competencies and international comparative studies.

**Keywords:** social competencies, emotional competencies, validation study, SEC-Q, Poland

From the point of view of interpersonal and social relationships, social and emotional competencies are among the most essential human competencies. Although studies on social and emotional competencies have been carried out for many years almost worldwide, in this era of rapid social changes, further research is necessary. Social and emotional competencies need to be further studied in different geographic areas, and it is still necessary to measure and describe these competencies among children and adolescents in Poland.

Emotional competence has been widely studied since the groundbreaking research on emotional intelligence initiated by Salovey and Mayer (1990). They defined emotional intelligence as a set of abilities that includes perceiving and expressing emotions, utilizing emotions in the course of cognitive processes, understanding and analyzing emotions, and directing emotions to control and regulate them (Salovey & Mayer, 1990; Mayer & Salovey, 1997).

Many authors use the term emotional competence, taking into account not only emotional intelligence, but also the ability to use it in a wide range of social situations. This approach is somewhat broader than

Salovey and Mayer's emotional intelligence, as it emphasizes the fact that the social context plays a key role in emotional functioning (Saarni, 1999).

Thus, emotional competence is closely related to social competence, especially because the ability to deal with one's own and other people's emotions is the basis of social interaction (Halberstad et al., 2001). This is particularly evident in peer interactions, where the dynamics of emotional transmission are important. Calkins et al. (1999) confirmed that children who can manage their own emotions have more peer relationships; children who can show their own emotions are more liked by their peers; children who can accurately interpret emotional messages are more socially accepted; and children who can deal with anger in a constructive way are also more liked. Thus, social and emotional competencies play an important role in interpersonal relationships, and consequently in school adjustment (Denham et al., 2003; DiPrete & Jennings, 2011).

Social and emotional competencies are predictors of school success and wellbeing (Corcoran et al., 2018; Llamas-Diaz et al., 2022). As the research shows, social and emotional competencies are the basis of school readiness (Carlton & Winsler, 1999). In addition, social and emotional competencies in early childhood relate to performance at school age (Trentacost & Izard, 2007). There is a correlation between cognitive skills, social and emotional competencies, and success at school and later in life (Jones et al., 2015).

Research has shown that social and emotional competencies are important predictors of effective human functioning in different areas. High levels of social and emotional competencies correlated positively with good physical and mental health (Extremera et al., 2011; Schutte & Malouff, 2011), greater resilience to stress and more adaptive ways of coping with stressful situations (Hunt & Evans, 2004), higher levels of life satisfaction (Extremera & Fernandez-Berrocal, 2005), and less aggression (Vega et al., 2022). Other studies have indicated a positive correlation between social and emotional competencies and feelings of satisfaction, willingness to help others, and openness to accept help from others. In contrast, there is a negative correlation between social and emotional competencies and mental disorders, addictions, and somatic symptoms (Knopp, 2013).

Although different models are used to describe social and emotional competencies, the model created by the Collaborative for Academic, Social, and Emotional Learning (CASEL; 2021) is probably the most accepted one among researchers and practitioners (Durlak et al., 2022). This model includes the competencies of self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Self-awareness is defined as the identification and recognition of one's own emotional states and the ability to recognize the connection between one's thoughts, emotions, and behavior. Self-management is defined as the ability to control and deal with one's emotions, as well as setting goals and being motivated to achieve them. Social awareness is defined as empathy and understanding of other people's emotions in different social contexts. Relationship skills are defined as the ability to initiate and maintain interpersonal relationships and the ability to communicate and cooperate. Responsible decision-making is understood as the ability to make constructive choices while respecting social norms (Durlak et al., 2011).

Although CASEL's model of social and emotional competencies is probably the most popular one worldwide, the number of instruments that measure these social and emotional competencies in a relatively short questionnaire is low (see Martinez Yarza et al., 2023). The Polish Psychological Testing Laboratory (n.d.) lists a total of 7 standardized tests designed to measure constructs of social and emotional learning (SEL). There are five tools to measure emotional intelligence: the INTE Emotional Intelligence Questionnaire by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim; the DINEMO Two-Dimensional Inventory of Emotional Intelligence by Jaworowska, Matczak, Ciechanowicz, Stańczak, and Zalewska; the Popular Questionnaire of Emotional Intelligence (PKIE) by Jaworowska, Matczak, Ciechanowicz, Stańczak, and Zalewska; the Test of Understanding Emotions (TRE) by Matczak and Piekarska; and the Scale of Emotional Intelligence - Faces SIE-T by Matczak, Piekarska, and Studniarek. There are two questionnaires that measure social competence: the KKS Social Competence Questionnaire by Matczak and the PROKOS Social Competence Profile by Matczak and Martowska.

All of the aforementioned tools examine either emotional competency or social competency separately. Thus, it is still necessary to validate the questionnaires in order to measure social and emotional competencies in different geographic areas, including Poland. This would make it possible to study the dynamics of the development of these competencies, as well as to conduct comparative studies between different countries.

The Social and Emotional Competencies Questionnaire (SEC-Q; Zych et al., 2018) is a tool with excellent psychometric properties that is useful for measuring different competencies that are usually promoted through SEL. It has also been used in dozens of publications to study the relationship between social and emotional competencies and other variables, such as antisocial behavior (Nasaescu et al., 2021), school violence (Zych et al., 2018), or cyberbullying (Marin-López et al., 2020).

There is a need to measure social and emotional competencies among children and adolescents in Poland and to compare them with those of their peers in other countries. Unfortunately, there is no international tool validated in Poland that would measure all the constructs in CASEL programs in one measurement instrument. Thus, the aim of this study was to validate the SEC-Q among children and adolescents in Poland.

## Method

### Participants

The survey included 1,052 participants, 55% of whom were students at four elementary schools ( $n = 580$ ) and 45% of whom were students at two secondary schools ( $n = 472$ ). All the schools were located in Lesser Poland: four of them in a large city and the other two in a small town. The age of the participants ranged from 9 to 16 years ( $M = 12.53$ ;  $SD = 1.98$ ). Among the participants 54.4% were girls ( $n = 572$ ), 44.9% were boys ( $n = 472$ ), and 0.7% did not disclose their gender ( $n = 8$ ).

### Design and Procedure

This was a cross-sectional ex post facto study conducted using a paper-and-pencil version of the questionnaire. First, the SEC-Q was translated from English into Polish and back-translated (by a Polish native speaker fluent in Spanish), and then the translation was checked by a certified translator. The schools were then contacted and the required authorization and consent for the survey were obtained. The students completed the questionnaire during school hours under the supervision of a representative of the research project. The participants were told the purpose of the research and were asked to answer sincerely. They were informed that the research was anonymous and voluntary and that they had the right to refuse or withdraw their participation at any time. All participants agreed to complete the questionnaires and none chose to withdraw from the study. However, 26 students did not mark any responses, so their data were not qualified for further analysis. The study was conducted in accordance with international and national ethical standards, including the Declaration of Helsinki and data protection regulations.

### Instruments

The Social and Emotional Competencies Questionnaire (Zych et al., 2018) was used to measure the social and emotional competencies of children and adolescents. The SEC-Q is a self-report instrument consisting of 16 items, each of which is formulated as a statement. The respondents are asked to indicate on a five-point Likert scale the degree to which they agree with each statement (ranging from 1 [strongly disagree] to 5 [strongly agree]). The answers are used to calculate the score on four scales: Self-Awareness (e.g., “I know how my emotions influence what I do”), Self-Management and Motivation (e.g., “I pursue my goals despite the difficulties”), Social Awareness and Relationship Skills (e.g., “I offer help to those who need me”), and Responsible Decision-Making (e.g., “I do not make decisions carelessly”). The SEC-Q has good psychometric properties (Zych et al., 2018). The psychometric properties of this tool in a Polish study group are described in this article.

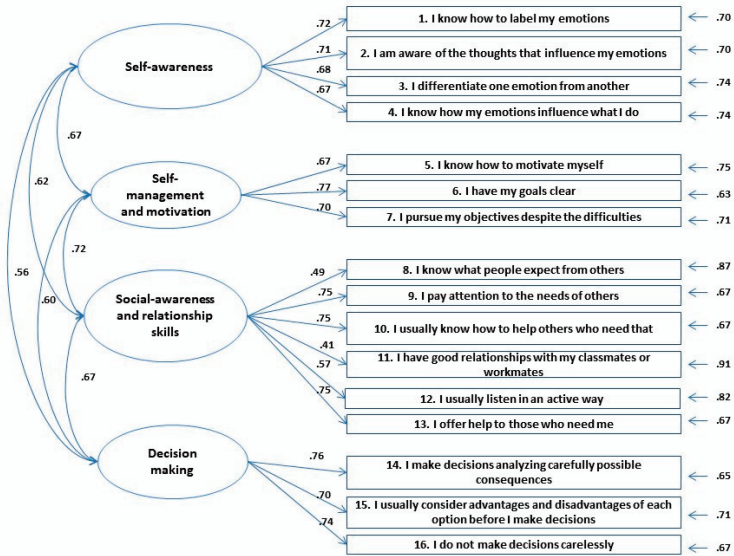
## Data Analysis

The psychometric properties of the SEC-Q were tested through Confirmatory Factor Analysis, performed with competencies maximum likelihood robust method and polychoric correlation (Satorra–Bentler chi-square) using the software program EQS 6.2. Model fit was tested through different indices such as the Normed Fit Index (NFI;  $\geq .90$ ), the Non-Normed Fit Index (NNFI;  $\geq .90$ ), the Comparative Fit Index (CFI;  $\geq .90$ ), and the Root Mean Square Error Approximation (RMSEA;  $\leq .08$ ) (Bentler, 1990). Descriptive statistics were calculated in PASW Statistics 20. Student's t-test was used to compare boys and girls and elementary- and secondary-school students. Polychoric alphas and omegas were calculated in FACTOR 10 (Lorenzo-Seva & Ferrando, 2015).

## Results

The Confirmatory Factor Analysis showed a very good fit of the original factor structure to the current data (see Figure 1). All factor loadings were above .40. The total alpha .91 and the omega = .91 (Factor 1: alpha = .83, omega = .83; Factor 2: alpha = .82, omega = .82; Factor 3: omega = .83, alpha = .82; Factor 4: alpha = .81, omega = .81).

**Figure 1. Confirmatory Factor Analysis of the Social and Emotional Competencies Questionnaire**



Satorra–Bentler chi-square = 285.48, df = 98, p > .05, CFI = .98, NFI = .98, NNFI = .97, RMSEA = .44, 90% CI = .038 - .050

The comparison between boys and girls in the entire sample showed no evidence of differences in self-awareness and self-management. On the other hand, the girls showed higher levels of social-awareness and relationship skills and decision-making than the boys (see Table 1).

**Table 1. Comparison between boys and girls on the Social and Emotional Competencies Questionnaire, by subscale**

	Boys M (SD)	Girls M (SD)	t	Total M (SD)
Self-Awareness	16.28 (3.61)	16.53 (2.79)	-1.20	16.41 (3.19)
Self-Management	12.19 (2.85)	12.07 (2.73)	.71	12.13 (2.78)
Social Awareness and Relationship Skills	23.48 (4.64)	24.21 (3.90)	-2.65**	23.88 (4.26)
Responsible Decision-Making	10.78 (3.11)	11.20 (2.82)	-2.26*	11.01 (2.96)
Total	62.96 (11.37)	64.11 (9.53)	-1.68	63.59 (10.41)

\* p < .05; \*\* p < .01



The comparison between elementary-school and secondary-school students revealed differences in all competencies in favor of the younger students.

**Table 2. Comparison between elementary- and secondary-school students on the Social and Emotional Competencies Questionnaire, by subscale**

	Elementary school M (SD)	Secondary school M (SD)	t	Total M (SD)
Self-Awareness	17.00 (2.97)	15.96 (3.28)	5.28**	16.41 (3.19)
Self-Management	13.03 (2.50)	11.45 (2.79)	9.58**	12.13 (2.78)
Social Awareness and Relationship Skills	25.71 (3.47)	22.44 (4.27)	13.48**	23.88 (4.26)
Responsible Decision-Making	11.91 (2.80)	10.34 (2.90)	8.82**	11.01 (2.96)
Total	67.65 (8.56)	60.23 (10.61)	12.17**	63.59 (10.41)

\*  $p < .05$ ; \*\*  $p < .01$

Percentiles for each scale and the total score are shown in Tables 3 and 4.

**Table 3. Percentiles for boys and girls in each subscale and the total score of the Social and Emotional Competencies Questionnaire**

	Self-Awareness	Self-Management and Motivation	Social Awareness and Relationship Skills	Responsible Decision-Making	Total score
	Boys/Girls	Boys/Girls	Boys/Girls	Boys/Girls	Boys/Girls
10	12/13	9/8	18/19	7/8	48/52
20	13/14	10/10	21/21	8/9	55/56
30	15/15	11/11	22/23	9/10	59/60
40	16/16	12/12	23/24	10/11	62/63
50	17/17	13/13	24/24	11/12	65/65
60	18/18	13/13	25/25	12/12	67/68
70	19/18	14/14	26/26	12/13	70/70
80	19/19	14/15	27/28	13/14	72/72
90	20/20	15/15	29/29	14/14	75/76

**Table 4. Percentiles for elementary and secondary education in each subscale and the total score of the Social and Emotional Competencies Questionnaire**

	Self-Awareness	Self-Management and Motivation	Social Awareness and Relationship Skills	Responsible Decision-Making	Total score
	Elementary/Secondary	Elementary/Secondary	Elementary/Secondary	Elementary/Secondary	Elementary/Secondary
10	13/12	10/7	21/17	8/6	55/48
20	15/14	11/9	23/20	10/8	61/52
30	16/15	12/10	24/21	11/9	64/56
40	17/16	13/11	25/22	12/10	66/59
50	18/17	13/12	26/23	12/11	69/62
60	18/17	14/13	27/24	13/11	71/64
70	19/18	15/13	28/25	13/12	73/67
80	20/19	15/14	29/26	14/13	75/69
90	20/20	15/15	30/27	15/14	78/72

## Discussion

Social and emotional competencies are studied around the world, as a high level is the basis of good mental and social functioning. Since the 1990s, programs have been conducted in many countries to promote these competencies in children and adolescents at various stages of education. A recent review of meta-analyses on social and emotional learning (Durlak et al., 2022) has located over 500 school-based interventions conducted with over one million students around the world and concluded that they effectively reduced behavioral problems. Unfortunately, the number of validated instruments that measure social and emotional competencies is still low, especially in some areas such as Poland. Those that do measure social and emotional competencies usually focus on one of their components instead of measuring a set of competencies in one tool. Thus, the aim of this study was to validate the SEC-Q in Polish children and adolescents.

The SEC-Q includes four scales: Self-Awareness, Self-Management and Motivation, Social Awareness and Relationship Skills, and Responsible Decision-Making. The questionnaire's structure coincides with the competencies promoted in many programs (Durlak et al., 2015). The original version of the questionnaire has excellent psychometric properties (Zych et al., 2018), which is also true for the Polish version of the SEC-Q. These properties have been confirmed through confirmatory factor analysis. The data showed an excellent fit to the model and all the subscales had very good reliability.

As expected, the results showed differences in social and emotional competencies by sex and age. Girls obtained higher scores in social awareness and relationship skills and decision-making, which may be caused by differences in the socialization of emotions between daughters and sons. Indeed, mothers' conversations with young girls are characterized by more frequent references to emotions than those with boys. In addition, girls are more likely to talk about emotions and mothers of daughters are more likely to refer to emotions than mothers of sons (Dunn et al., 1987). Higher social awareness and relationship skills may also result from girls' earlier acquisition of verbal skills, which translates into better articulation of their own emotions. Brody and Hall (1993) found that an earlier acquisition of verbal skills results in better communication with peers and better conflict resolution skills through dialogue. Girls emphasize cooperation as much as possible in their early social behavior, while boys rely on competition. Boys pride themselves on independence and autonomy, while for girls it is more important to take pride in satisfying interpersonal relationships.

Our findings also showed differences by age, with younger students demonstrating higher social and emotional competencies. Perhaps adolescence, which is undoubtedly associated with emotional lability, makes adolescents less able to understand and control their own emotions, which may also affect social relationships.

These results are in line with other studies on social and emotional competencies, which showed that boys use more emotional suppression than girls (Gómez-Ortiz et al., 2016). Previous studies also found that adult

women scored higher than men in emotional intelligence, but this difference almost disappeared when age was controlled for (Fernández-Berrocal et al., 2012). The current study showed gender differences in some variables, mostly related to social competencies, but future studies could be useful to clarify these differences.

The current study provided a validated questionnaire that can be used to measure social and emotional competencies in Poland. At the same time, the authors are aware of some limitations of this study, which are related to the selection of participants (convenience sampling) and the method of measurement (self-reported survey). It would be necessary to conduct a more extensive study, selecting schools at random and including a larger number of students in different age ranges. The survey also has some very important strengths, such as the strong theoretical background and large study group.

The study has important implications for research and practice. The SEC-Q is a very good tool for examining social and emotional competencies in clinical and educational settings. This instrument can also be very useful when evaluating prevention programs that promote social and emotional competencies in children and adolescents. Regarding research, the SEC-Q can now be used in Poland to study the relationships between social and emotional competencies and other important constructs. Comparative studies on social and emotional competencies, in Poland and other countries, can now also be conducted.

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