Psychometric evaluation of a social-emotional competence assessment instrument for high school students: Evidence of construct validity and reliability

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ABSTRACT

Social Emotional Competence (SEC) was one of the essential competencies in 21st-century education, playing a crucial role in students' personal and social development. However, valid and reliable instruments for assessing SEC for high school students in Indonesia were still limited. The instrument used in this study was adapted from the CASEL framework, which encompassed five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The adaptation process involved contextual and linguistic adjustments to align with the characteristics of Indonesian students. This study aimed to examine the validity and reliability of the adapted SEC assessment instrument. The research subjects consisted of 220 high school students in Demak who responded to a questionnaire. This study was categorized as descriptive quantitative. Construct validity was tested using CFA, while reliability was estimated using Cronbach's alpha. The construct validity test produced model feasibility indices with CFI = 0.928, TLI = 0.9109, SRMR = 0.0534, and RMSEA = 0.0601. These results indicated that the measurement model demonstrated good feasibility. Based on the CFA analysis, 25 items were declared valid. Of these, 22 items had loading factor values greater than 0.5, while three items had loading factor values below 0.5. Despite the lower factor loadings, these three items were retained because they represented essential indicators. However, the item statements were revised to improve clarity and better represent the intended construct. The internal consistency reliability test showed a Cronbach's alpha coefficient of 0.942. Since the coefficient value exceeded 0.70, the instrument could be considered reliable.

INTRODUCTION

Social-Emotional Competence (SEC) is a crucial skill in 21st-century education because it enables students to regulate their emotions, understand others' perspectives, and establish healthy social relationships. These competencies foster prosocial behaviors such as cooperation, empathy, and social responsibility (Taylor et al., 2017). Conversely, adolescents who fail to master social and emotional skills may experience feelings of inferiority, social exclusion, deviant behavior, or even severe mental health problems such as delinquency, criminal acts, and violence (Wafroturrohmah & Sulistiyawati, 2018). Strengthening SEC has been shown to reduce problematic behaviors, including aggression, misconduct, and disciplinary violations (Durlak et al., 2020). Skills in emotional regulation and self-control also directly influence student discipline in learning, rule compliance, and task completion (Morris et al., 2021). Furthermore, SEC contributes to the overall classroom climate: when students demonstrate healthy social behavior, learning becomes more orderly and conducive (O'Conner et al., 2017).

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Social-Emotional Learning (SEL) is a promising approach to reduce risky behaviors, address discipline problems, and foster positive development (Ching et al., 2015). The benefits of SEL for students include: (1) more positive attitudes toward themselves and others, including improved self-efficacy, self-confidence, perseverance, empathy, and goal achievement; (2) more positive social behavior and relationships with peers and adults; (3) reduced behavioral problems; (4) decreased emotional distress; and (5) improved academic achievement and school attendance (Durlak et al., 2011). Research also confirms that SEL positively influences students' social-emotional outcomes, behavior, academic achievement, and classroom climate (McCormick et al., 2015). Students who participate in SEL programs experience significant improvements in academic functioning, social-emotional skills, attitudes, behaviors, and perceptions of school climate and safety (Cipriano et al., 2024).

Despite these benefits, many students in Indonesia still struggle to regulate emotions, respect differences, avoid social conflict, and cooperate in groups. Teachers and schools also face challenges in assessing students' social and emotional aspects due to the limited availability of valid and culturally appropriate instruments. Existing instruments are either empirically invalid or unsuitable for the Indonesian context (Astuti et al., 2021). Findings from international studies confirm that SEC can be effectively shaped through school-based programs in collaboration with families and communities (Mahoney et al., 2018). Access to reliable SEC assessment data is crucial for educators because it informs program design, resource allocation, student needs, and policy decisions (Assessment Work Group, 2019). However, such assessment data are often unavailable in practice.

Several models and approaches guided the development of SEC assessment instruments. The Emotional Intelligence model developed by Goleman (2006) emphasized emotional and social skills such as self-awareness, self-regulation, empathy, and social competence. Rose-Krasnor's (1997) model of social competence focused on the adaptive functions of social behavior, including cognitive, emotional, and behavioral aspects. Zins et al. (2004) highlighted the importance of developing SEC as a foundation for students' academic success. The Collaborative for Academic, Social, and Emotional Learning (CASEL) provided the most comprehensive framework, specifically designed for school contexts. CASEL identified five core domains of SEC: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2020). Other frameworks included the Big Five Personality Traits (John et al., 2008; Soto & John, 2017), the SEAL framework in the UK (Department for Education and Skills, 2005), and the OECD's Social and Emotional Skills Framework (OECD, 2021).

Among these, the CASEL framework was considered the most appropriate for instrument development for several reasons. First, it had served as the basis for numerous school-based interventions proven effective in improving prosocial behavior, academic achievement, and reducing problem behaviors (Taylor et al., 2017). Second, CASEL's five domains comprehensively covered both intrapersonal and interpersonal dimensions and had been conceptually validated across educational contexts (CASEL, 2020). Third, the framework was specifically designed for school implementation, making it highly relevant for developing SEC assessment instruments for students (Mahoney et al., 2018). Fourth, although it was developed in the United States, the framework was flexible and adaptable for integration into other cultural contexts, including Indonesia, while allowing localization of indicators without losing its core principles (Cipriano et al., 2020). Finally, CASEL had been internationally recognized as a standard reference for SEL, and major organizations such as the OECD and UNESCO referred to it in policy guidelines and SEL measurement development (OECD, 2015).

Several assessment methods for SEC have been developed, such as self-reports, rating scales, direct assessments, report cards, and administrative data (Assessment Work Group, 2019; Atwell & Bridgeland, 2019). These assessments must be developmentally appropriate, as children's social and emotional needs vary across developmental stages. Zhou and Ee (2012)

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developed the Social Emotional Competence Questionnaire (SECQ), based on the five CASEL competencies, to assess adolescents' SEC. The instrument has demonstrated validity and reliability in Eastern and Asian populations (Petric & Szamoskozi, 2018; Rahayu & Mustikasari, 2020). However, the number of SEC measurement tools remains limited worldwide (Zych et al., 2018; Martinez-Yarza et al., 2023).

Previous adaptations of the SECQ (Zhou & Ee, 2012) have not been validated for Indonesian adolescents using Confirmatory Factor Analysis (CFA); thus, the construct validity of this instrument within the Indonesian cultural context remains untested. Considering that social and emotional competencies may manifest differently across cultures, it is essential to ensure that the instrument's structure and indicators align with the characteristics of Indonesian students. Therefore, this study aims to adapt and validate the SEC assessment instrument for high school students in Indonesia, using the CASEL framework as the theoretical foundation for the adaptation. The study involves testing the construct validity and reliability of the adapted instrument through CFA and internal consistency analysis. The results are expected to provide empirical evidence supporting the use of the adapted SECQ in the Indonesian context and to contribute to the development of a culturally appropriate and theoretically grounded tool for assessing students' social and emotional competencies.

Given these gaps, this study seeks to test the construct validity and reliability of the SEC instrument for high school students in Indonesia. The goal is to ensure that the instrument is both valid and reliable for assessing students' social-emotional competencies.

METHOD

Research Aims

This study aimed to measure the validity and reliability of a social-emotional competency assessment instrument for high school students. Construct validity was analyzed using CFA, while internal consistency reliability was analyzed using Cronbach's Alpha. This study was a type of descriptive quantitative study. Descriptive quantitative research is designed to describe trends, attitudes, or opinions of a population by studying a sample and analyzing quantitative data statistically (Creswell, 2014).

Sample and Data Collection

Table 1. Distribution of Indicators and Items of the SEC Assessment Instrument

Sub-Variables	Indicators	Item
Self-awareness	Emotional awareness	1, 12, 15
	Self-perception	4, 7, 35, 51
	Optimism	8, 9, 10, 11
Self-management	Self-control	2, 3, 29, 33
	Goal setting and achievement	13, 17, 18
	Adaptability	19, 20, 21, 22
Social awareness	Empathy	24, 25, 28
	Respect for people	27, 36, 43, 50
	Appreciation of diversity	30, 31
	Social contribution	23, 32
Relationship skills	Communication	6, 26, 52
	Conflict management	16, 39, 48
	Collaboration and teamwork	40, 47, 54
	Ability to build relationships	6, 34
Responsible decision making	Problem identification and condition analysis	38, 41, 45
	Solution to problem	46, 49
	Evaluation and reflection	5, 42, 44, 53, 55

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Data were collected using a questionnaire consisting of 55 statements measured on a five-point Likert scale, namely always (5), often (4), sometimes (3), rarely (2), and never (1). The variables examined in this study were the SEC of high school students. The test subjects consisted of 220 high school students in Demak. The variables were measured based on five social-emotional competencies in accordance with the CASEL framework. More detailed information is presented in Table 1.

Data Analysis

Data from observations and interviews were analyzed using descriptive statistics. The construct validity of student responses was verified using the CFA method, while reliability estimation was carried out using the Cronbach's Alpha internal consistency method. The researchers conducted CFA and Cronbach's Alpha internal consistency analyses using the Jamovi 2.6.44 program.

In proving construct validity, the test conducted was CFA using the Jamovi program. The CFA method was used to confirm the theory in measuring the accuracy of the parameters (Rahmi, 2015). The initial step was to test the model's suitability index. One of the indicators used to test model suitability was the chi-square. Chi-square measured the difference between observed data and the hypothesized model (Schumacker & Lomax, 2015). In addition to chi-square, model suitability indicators were obtained from four measures, namely the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). A model was considered appropriate if its model fit test values met the established criteria (Rahmi et al., 2022). The model fit test criteria are presented in Table 2.

Table 2. Model Feasibility Test Criteria

No.	Model Feasibility Test	Criteria
1	CFI	> 0.90
2	TLI	> 0.90
3	RMSEA	< 0.08
4	RMSR	< 0.08

(Source: Hair *et al*., 2010)

In estimating reliability, the Cronbach's Alpha internal consistency model was used. The internal consistency method was the most widely applied because the test was conducted without the need for repetition, thereby avoiding problems that might arise during repeated testing (Khumaedi, 2012). The formula for Cronbach's Alpha reliability is presented in Formula (1).

$$\alpha = \frac{k}{k-1} \cdot \left(1 - \frac{\Sigma Si^2}{St^2}\right) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \textbf{(1)}$$

Information :

α = *Cronbach's Alpha Reliability*

k = Number of grains

ΣSi^2 = Total number of item variants

St^2 = Total score variance

FINDINGS AND DISCUSSION

Findings

Testing of the instrument construct validity was carried out using the CFA method. The results of the analysis of the SEC assessment instrument using CFA are presented as follows. The first CFA test analysis result was the model feasibility test. The model feasibility test was

conducted using chi-square along with CFI, TLI, SRMR, and RMSEA indices. The results of the model feasibility test using chi-square obtained the value of $\chi^2 = 478$, df = 264, $p < 0.01$. A chi-square value with $p < 0.01$ was considered less significant, since a significant chi-square value is indicated when $p > 0.05$ (Hair et al., 2010). The chi-square value showed insignificant results; however, because chi-square is highly sensitive to large sample sizes, it was necessary to consider other model feasibility indices (Ghozali, 2017). The other model feasibility index values demonstrated good results, namely CFI > 0.90, TLI > 0.90, SRMR < 0.08, and RMSEA < 0.08, which were included in the good and acceptable criteria (Hair et al., 2010). The model feasibility indices were statistical measures used to evaluate how well a theoretical model reflected the collected data. Thus, overall, the measurement model in this study showed good feasibility and could be used to measure the intended construct validly and reliably.

Table 3. Loading Factors Value of the SEC Assessment Instrument

Factors	Indicator	Estimate	SE	Z	P
Self-awareness	Item 4	0.708	0.0564	12.55	<0.01
	Item 9	0.730	0.0616	11.85	<0.01
	Item 12	0.784	0.0519	15.10	<0.01
	Item 35	0.811	0.0516	15.72	<0.01
Self Management	Item 2	0.434	0.0840	5.16	<0.01
	Item 13	0.713	0.0613	11.64	<0.01
	Item 18	0.751	0.0695	10.81	<0.01
	Item 20	0.883	0.0455	19.40	<0.01
	Item 21	0.867	0.0427	20.30	<0.01
Social Awareness	Item 23	0.424	0.0767	5.53	<0.01
	Item 27	0.857	0.0558	15.37	<0.01
	Item 28	0.861	0.0692	12.45	<0.01
	Item 31	0.831	0.0618	13.45	<0.01
	Item 36	0.813	0.0650	12.52	<0.01
	Item 43	0.784	0.0702	10.65	<0.01
Relationship Skills	Item 34	0.746	0.0751	9.94	<0.01
	Item 47	0.950	0.0728	13.06	<0.01
	Item 48	0.924	0.0697	13.26	<0.01
	Item 52	0.752	0.0649	11.59	<0.01
Responsible Decision Making	Item 38	0.703	0.0714	9.85	<0.01
	Item 42	0.816	0.0685	11.92	<0.01
	Item 44	0.762	0.0662	11.52	<0.01
	Item 49	0.413	0.0742	5.56	<0.01
	Item 54	0.857	0.0659	13.00	<0.01
	Item 55	0.771	0.0703	10.96	<0.01

Based on Table 3, the loading factor values ranged from 0.413 to 0.950. The lowest value was 0.413 and the highest 0.950. According to Umar and Nisa (2020), indicators with loading factor values above 0.50 are considered strong contributors to the construct. Of the 25 items, 22 items had loading factor values greater than 0.50 and were significant at the $p < 0.01$ level, indicating that these indicators validly represented their respective constructs.

Three items (item 2, item 23, and item 49) had loading factor values below 0.50, suggesting weaker relationships with their constructs. However, these items were retained for theoretical reasons. Each represented a unique and essential behavioral indicator within its domain: item 2 captured self-control under stress in the self-management domain, item 23 reflected sensitivity to others' emotional cues within social awareness, and item 49 represented moral reasoning in everyday decision-making. Although these indicators showed lower statistical loadings, their theoretical significance and empirical distinctiveness supported their inclusion (Hair et al., 2010; Byrne, 2016). Nevertheless, their item statements were revised to improve clarity and contextual relevance for future validation studies.
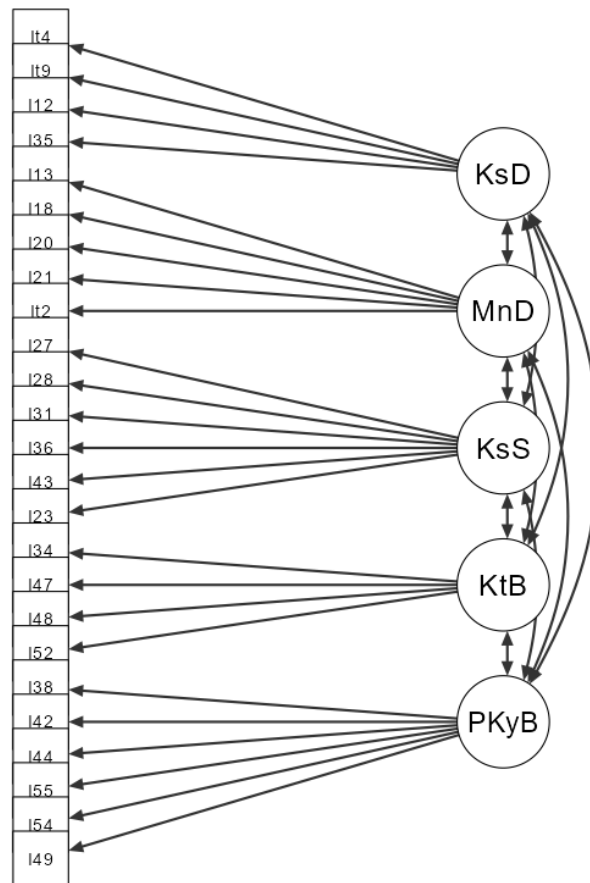
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Figure 1. Path Diagram of SEC Assessment Instrument

Figure 1 illustrated the relationship between indicators (statement items) and the five latent constructs (hidden factors). In the diagram, five latent constructs were generated, namely self-awareness (KsD), self-management (MnD), social awareness (KsS), relationship skills (KtB), and responsible decision-making (PKyB). Arrows from the indicators (e.g., It4, It9, It12, It35) to the constructs indicated that each indicator measured a particular construct. For example, It4, It9, It12, and It35 measured KsD, showing that each construct was measured by more than one indicator, in accordance with the CFA principle. Furthermore, the two-way arrows between constructs indicated correlations among the constructs. For instance, the KsD construct had relationships with other constructs, namely MnD, KsS, KtB, and PKyB. Based on Figure 1, it was concluded that the model demonstrated correlations between latent constructs and the indicators that measured them.

The scores of the 25 items of the SEC assessment instrument for high school students were then estimated for reliability using the Cronbach's Alpha internal consistency model, with the criteria for a reliability coefficient value of ≥ 0.70. The results of the score analysis obtained from students are presented in the table. The analysis of the 25 items of the SEC assessment instrument using the Cronbach's Alpha internal consistency model showed a reliability coefficient value of 0.942. Since the index obtained was ≥ 0.70, it could be stated that the SEC assessment instrument for high school students was reliable.

Discussion

The item was declared valid based on the construct validity test that had been carried out using the model feasibility value. The results of the instrument construct validity analysis using the CFA model showed that most indicators had loading factor values greater than 0.5 and were

significant at the p < 0.001 level. The results of the model feasibility test indicated that the CFA model fit the empirical data, as shown by the values of CFI = 0.928, TLI = 0.919, SRMR = 0.0534, and RMSEA = 0.0601. Construct validity demonstrated the extent to which the indicators contained in an instrument were able to reflect the construct being measured (Sugiyono, 2017). In CFA, attention needed to be paid to the model feasibility index and the loading factor value. A loading factor value ≥ 0.50 indicated that each indicator could be considered valid in measuring the intended construct (Hair et al., 2010; Ghozali, 2017).

The chi-square value showed significant results; however, because chi-square was sensitive to large sample sizes, other model fit indices needed to be considered (Ghozali, 2017). An RMSEA value below 0.08 indicated a fairly good model fit (Browne & Cudeck, 1992), while an SRMR value below 0.08 indicated very good model fit (Hu & Bentler, 1999). In addition, CFI and TLI values above 0.90 each showed that the model had good goodness-of-fit (Hair et al., 2010). For comparison, research by Sriyono and Purwoko (2022) found that the self-confidence factor had a loading factor value of 0.72, while the weakest factor was honesty, with a value of 0.57. Research by Rahmi et al. (2022) also showed the results of the goodness-of-fit test in which the latent variable of social support had a CFI (0.976) and TLI (0.953) greater than 0.90, with RMSEA (0.064) and RMSR (0.037) values below 0.08, meeting the model fit criteria.

The results of the construct validity analysis further indicated that out of the 55 items developed, only 25 items were construct valid. These items consisted of: self-awareness (item 4, item 9, item 12, item 35), self-management (item 2, item 13, item 18, item 20, item 21), social awareness (item 23, item 27, item 28, item 31, item 36, item 43, item 50), relationship skills (item 34, item 47, item 48, item 52), and responsible decision-making (item 38, item 42, item 44, item 49, item 54, item 55). Items 2, 23, and 49 had loading factor values below 0.5 but were still significant at the p < 0.01 level, indicating that the relationship with the construct was statistically significant but weak. These indicators were therefore less effective in measuring the construct unless supported by a strong theoretical justification. For this reason, changes to the wording of these items were needed to improve clarity and strengthen their relationship with the construct being measured.

According to Hair et al. (2010), indicators with loading factor values below 0.5 could be retained if they had strong theoretical justification and substantive relevance to the construct being measured. Thus, even if an item had a loading factor below 0.5, it was retained if it represented important aspects not captured by other indicators. However, such items required improvement or revision in terms of wording and content to increase clarity and construct validity. Byrne (2010) also argued that indicators with low loading factors should be revised rather than eliminated, while Fornell and Larcker (1981) noted that such indicators could still be meaningful if they represented specific aspects of a construct not represented by other items.

The reliability analysis of the 25 items of the SEC assessment instrument using Cronbach's Alpha internal consistency model produced a reliability coefficient of 0.942. Internal consistency tested instrument reliability by examining item homogeneity, meaning that the items consistently measured the same construct (Azwar, 2015). A high Cronbach's Alpha coefficient indicated that the instrument had good reliability. An instrument was considered reliable if the coefficient exceeded 0.70 (Sugiyono, 2019). This finding was consistent with prior research: Syafitri (2017) reported a Cronbach's Alpha value of 0.94, indicating reliable questionnaire items; Sriyono and Purwoko (2022) found reliability (CR = 0.98) for a social science attitude instrument; Rahmi et al. (2022) reported a CR value of 0.7088 (> 0.70); and Prawita and Heryadi (2023) found a Cronbach's Alpha coefficient of 0.887 for a resilience scale, which also indicated good internal consistency.

Despite the strong construct validity and high reliability results, this study has several limitations. The sample was limited to 220 high school students from Demak, which may not fully represent the diversity of cultural, social, and educational contexts across Indonesia. Therefore, the generalizability of the findings is limited. Additionally, although the CFA results

showed an acceptable model fit, three items still had relatively low loading factors, suggesting the need for further refinement and validation. Future studies should involve larger and more diverse samples from different regions to test the measurement invariance and cross-cultural applicability of the SEC instrument. It is also recommended to conduct longitudinal and multi-method validation (e.g., teacher ratings, behavioral observations) to strengthen the evidence of the instrument's construct validity and ensure its broader applicability in educational settings.

CONCLUSION

The construct validity test obtained model feasibility values of CFI = 0.928, TLI = 0.9109, SRMR = 0.0534, and RMSEA = 0.0601. These results indicated that the measurement model in the study demonstrated good feasibility, since CFI > 0.90, TLI > 0.90, SRMR < 0.08, and RMSEA < 0.08. Of the 25 items retained, 22 items had loading factor values above 0.5, while 3 items had values below 0.5. Although the latter were weaker, they were retained because they represented important indicators. The items were revised to improve clarity and strengthen their representation of the constructs. The internal consistency reliability analysis produced a Cronbach's Alpha coefficient of 0.942. As this value exceeded 0.70, the SEC assessment instrument for high school students could be declared reliable.

DISCLOSURE STATEMENT

The authors declare that they have no conflict of interest to disclose.

ETHICS APPROVAL

No ethics approval is needed because the study involved an anonymous, non-sensitive questionnaire that posed no additional risk to students, and therefore, met the criteria for exemption under institutional guidelines.

REFERENCES

Assessment Work Group. (2019). *Student social and emotional competence assessment: The current state of the field and a vision for its future.* Collaborative for Academic, Social, and Emotional Learning.

Astuti, S., Pramudiani, P., Masykuroh, K., & Ulfah, S. (2021). Sinergitas guru dan orang tua dalam integrasi nilai karakter pada pembelajaran daring di masa pandemi COVID-19. *Jurnal Pendidikan Karakter, 12*(1), 117–133. https://doi.org/10.21831/jpk.v0i1.38898

Atwell, M., & Bridgeland, J. (2019). *Ready to lead: A 2019 update of principals' perspectives on how social and emotional learning can prepare children and transform schools.* Civic Enterprises.

Azwar, S. (2015). *Dasar-dasar psikometrika* (2nd ed.). Pustaka Pelajar.

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research, 21*(2), 230-258. https://doi.org/10.1177/0049124192021002005

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge.

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge.

CASEL (2020). *Compendium of SEL assessment measures.* Collaborative for Academic, Social, and Emotional Learning (CASEL). https://casel.org/state-resource-center/assessment-tools/

Ching, L. M., Jiar, Y. K., & Jaffri, H. (2015). Developing discipline among students through social-emotional learning: A new model to prevent and reduce behavior problems. *Journal of Education and Vocational Research, 6*(2), 80–90. https://doi.org/10.22610/JEVR.V6I2.193

Cipriano, C., Barnes, T., Pyle, S., & Rivers, S. E. (2020). *Supporting SEL implementation in diverse contexts: The role of adaptation.* CASEL Brief Series. https://casel.org

Cipriano, C., Ha, C., Wood, M., Sehgal, K., McCarthy, M. F., Strambler, M. J., Naples, L. H., Eveleigh, A., Ponnock, A., Chow, J. C., Durlak, J., & Funaro, M. (2024). A systematic review and meta-analysis of the effects of universal school-based SEL programs in the United States: Considerations for marginalized students. *Social and Emotional Learning: Research, Practice, and Policy, 3*, 100029. https://doi.org/10.1016/j.sel.2024.100029

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.

Department for Education and Skills. (2005). *Excellence and enjoyment: Social and emotional aspects of learning (SEAL): Guidance.* DfES Publications.

Durlak, J. A., Domitrovich, C. E., Weissberg, R. P., & Gullotta, T. P. (Eds.). (2020). *Handbook of social and emotional learning: Research and practice.* The Guilford Press.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.2307/3151312

Ghozali, I. (2017). *Model persamaan struktural: Konsep dan aplikasi dengan program AMOS 24.* Badan Penerbit Universitas Diponegoro.

Goleman, D. (2006). *Emotional intelligence: Why it can matter more than IQ* (10th Anniversary ed.). Bantam Books.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Prentice Hall.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy. In *Handbook of personality: Theory and research* (3rd ed., pp. 114–158). Guilford Press.

Khumaedi, M. (2012). Reliabilitas instrumen penelitian pendidikan. *Jurnal Pendidikan Teknik Mesin, 12*(1), 25–30. https://journal.unnes.ac.id/nju/index.php/JPTM/article/view/5273

Mahoney, J. L., Durlak, J. A., & Weissberg, R. P. (2018). An update on social and emotional learning outcome research. *Phi Delta Kappan, 100*(4), 18-23. https://doi.org/10.1177/0031721718815630

Martinez-Yarza, N., Santibáñez, R., & Solabarrieta, J. (2023). A systematic review of instruments measuring social and emotional skills in school-aged children and adolescents. *Child Indicators Research*, *16* (4), 1475–1502. https://doi.org/10.1007/s12187-023-10031-3

McCormick, M. P., Cappella, E., O'Connor, E. E., & McClowry, S. G. (2015). Social-emotional learning and academic achievement: Using causal methods to explore classroom-level mechanisms. *AERA Open, 1*(3), 1–26. https://doi.org/10.1177/2332858415603959

Morris, A. S., Hays-Grudo, J., Zapata, M. I., Treat, A. E., & Kerr, K. L. (2021). Adverse and protective childhood experiences and parenting attitudes: The role of cumulative protection in understanding resilience. *Advers Resil Sci, 2*(3), 181–192. https://doi.org/10.1007/s42844-021-00036-8

O'Conner, R., de Feyter, J., Carr, A., Luo, J. L., & Romm, H. (2017). *A review of the literature on social and emotional learning for students ages 3–8: Characteristics of effective social and emotional learning programs (Part 1 of 4).* U.S. Department of Education.

OECD. (2015). *Skills for social progress: The power of social and emotional skills.* OECD Publishing. https://doi.org/10.1787/9789264226159-en

OECD. (2021). *Beyond academic learning: First results from the survey of social and emotional skills.* OECD Publishing. https://doi.org/10.1787/92a11084-en

Petric, E., & Szamoskozi, S. (2018). Translation and adaptation of the social-emotional competence questionnaire for Hungarian population. In *Proceedings of the 5th International Multidisciplinary Scientific Conference on Social Sciences and Arts, Sofia, Bulgaria, 24 August–2 September 2018.* https://doi.org/10.5593/sgemsocial2018/3.2/S11.069

Prawita, E., & Heryadi, A. (2023). Analisis validitas konstrak dan analisis konsistensi internal pada skala resiliensi. *PSIMPHONI: Jurnal Psikometri dan Psikologi, 4*(1), 8–19. https://doi.org/10.30595/psimphoni.v4i1.14477

Rahayu, E. W., & Mustikasari, D. S. (2020). The significant role of culture to value differences: Socio-emotional challenge in digital era. In *Proceedings of the 5th ASEAN Conference on Psychology, Counselling, and Humanities (ACPCH 2019), Gelugor, Malaysia, 2–3 November 2019,* 234–239. Atlantis Press. https://doi.org/10.2991/assehr.k.200120.049

Rahmi N. S., Amaliana, L., Pimada, L. M., Yesica, R., & Ningsih, D. N. C. (2022). Confirmatory factor analysis pada indikator kesembuhan pasien isolasi mandiri Covid-19 di Indonesia. *Statistika, 22*(1), 13-23. https://doi.org/10.29313/statistika.v22i1.477

Rahmi, N. S. (2015). *Analisis pengaruh dukungan motivasi dan pengetahuan terhadap tindakan penyembuhan penderita penyakit Tuberculosis (TB) di pesisir Surabaya dengan pendekatan SEM (Structural equation modelling).* Thesis, Institut Teknology Sepuluh Nopember.

Rose-Krasnor, L. (1997). The nature of social competence: A theoretical review. *Social Development*, 6(1), 111–135. https://doi.org/10.1111/j.1467-9507.1997.tb00097.x

Schumacker, R. E., & Lomax, R. G. (2015). *A beginner's guide to structural equation modeling* (4th ed.). Routledge. https://doi.org/10.4324/9781315749105

Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113(1), 117–143. https://doi.org/10.1037/pspp0000096

Sriyono, & Purwoko, R. Y. (2022). Confirmatory factor analysis instrumen sikap sosial sains siswa SMA. *Jurnal Evaluasi Pendidikan, 13*(2), 131–137. https://doi.org/10.21009/jep.v13i2.28533

Sugiyono. (2017). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D.* Alfabeta.

Sugiyono. (2019). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D*. Alfabeta.

Syafitri, W. (2017). Confirmatory factor analysis (CFA) model penerimaan teknologi berbasis keamanan informasi. *SITEKIN: Jurnal Sains, Teknologi dan Industri, 14*(2), 157-168. https://ejournal.uin-suska.ac.id/index.php/sitekin/article/view/4126

Taylor, R., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development, 88*(4), 1156–1171. https://doi.org/10.1111/cdev.12864

Umar, M., & Nisa, K. (2020). *Structural Equation Modeling (SEM): Konsep dan aplikasi menggunakan AMOS*. Raja Grafindo Persada.

Wafroturrohmah, W., & Sulistiyawati, E. (2018). Manfaat kegiatan ekstra kurikuler dalam pengembangan kompetensi sosial siswa SMA. *Manajemen Pendidikan, 13*(2), 147-155. https://doi.org/10.23917/jmp.v13i2.7482

Zhou, M., & Ee, J. (2012). Development of the Social Emotional Competence Questionnaire (SECQ). *The International Journal of Emotional Education, 4*, 27–42.

Zins, J. E., Weissberg, R. P., Wang, M. C., & Walberg, H. J. (2004). *Building academic success on social and emotional learning: What does the research say?* Teachers College Press.

Zych, I., Ortega-Ruiz, R., Muñoz-Morales, R., Llorent, V. J., & De Córdoba, U. (2018). Dimensions and psychometric properties of the Social and Emotional Competencies Questionnaire (SEC-Q) in youth and adolescents. *Revista Latinoamericana de Psicología, 50*(2), 98–106. https://doi.org/10.14349/rlp.2018.v50.n2.3