



Development of The Social Emotional Learning Questionnaire for Students of Mathematics Education

Wirda Hayati ¹, Wardani Rahayu ², Iva Sarifah ³

^{1,2,3} Education Research and Evaluation, State University of Jakarta, Jakarta, Indonesia

Corresponding Author: Wirda Hayati. Email: WirdaHayati_7817167810@mhs.unj.ac.id

ABSTRACT

Social Emotional Learning (SEL) is a process of managing emotions, achieving positive goals, feeling empathy, maintaining positive relationships, and making responsible decisions. Research has found that students who develop SEL competencies lead healthier lives and perform better in school. The purpose of this study was to map research trends in the development of SEL questionnaire for students of mathematics education. This research method uses qualitative methods with a literature review approach. Data collection uses *the Harzings Publish or Perish* application using data from *Google Scholar*, produces bibliometric network images from the VOSviewer application, and is strengthened by *Systematic Literature Review* (SLR) of SEL questionnaire development articles in international journals in the last 10 years (2013-2023). From a search of articles that researched the development of the SEL questionnaire, it was shown that the majority of the SEL questionnaire developed were for students from kindergarten to high school. There is three article that examines the development of SEL questionnaire for university students, but students as a whole. Based on the review of the article above, it can be used as a basis for developing questionnaire to measure SEL in students of mathematics education.

Keywords: Mathematics; Questionnaire; *Social Emotional Learning*; University Student

Copyright © 2023: Wirda Hayati et al.

INTRODUCTION

Mathematics is an agent that facilitates people's understanding of the world, enabling them to do so in order to enhance life and create ideas. Therefore, in all the reforms implemented in modern education, the most important target is to create a system that can help students learn better with understanding mathematics. However, one of the factors that negatively affects this target is the experience of students' anxiety in terms of mathematics (Peker & Ulu, 2018). Maths anxiety is a problem that affects many disciplines in different countries and sectors. Mathematical anxiety is defined as a feeling of tension and fear that interferes with mathematical performance skills, manipulating numbers and solving mathematical problems in various everyday life and academic situations (Khasawneh, 2021). Anxiety is a feeling and experience experienced by individuals at certain times. This feeling affects live negatively and often generate anxiety, giving rise to feelings of fear of weak performance (Kose et al , 2018).

Anxiety is one of them common among the types of academic anxiety experienced in school. It can be defined as a feeling of tension and the nervousness that gets in the way of manipulating and crunching numbers. Today, efficiency in mathematics has become an important issue for every good individual in life professional and social. It is true that the task requires knowledge of mathematics , but the stress and disappointment associated with mathematics is a trigger for anxiety, which is urges both educators and researchers to reconsider approaches to address long-term problems that impede

individual success in school and reduce quality of life (Kucian et al , 2018). To overcome these problems in learning mathematics, one of them is by applying Social and Emotional Learning (SEL).

SEL is a promising approach to increasing students' success in school and life (Elias, et al. 2006). Research shows that mastery of social-emotional competencies is associated with well-being and better school performance while failure to achieve competence in these areas can lead to various personal, social, and academic difficulties (Eisenberg, 2006). Recent research has found that students who develop social and emotional competence lead healthier lives and perform better at school (Greenberg et al, 2003). Therefore, educators and governments around the world are promoting learning that emphasizes social and emotional skills (Durlak et al, 2011).

The SEL program involves implementing practices and policies that help both children and adults acquire and apply knowledge, skills, and attitude which includes competence to understand and managing emotions, managing and achieving positive goals , feeling and showing care and concern to others, build and maintain positive relationships, and make responsible decisions (CASEL, 2012). The implementation of the SEL program shows an academic advantage that is two times higher than other programs. The SEL program also shows a reduction in behavioral problems and emotional distress, namely depression and anxiety, which is more than twice as large (Durlak, 2016).

The development and validation of social and emotional learning scales is of satisfactory metric quality and provides a detailed and consolidated picture of adolescents' levels of self-awareness, social awareness, self-control, interpersonal skills, and responsible decision-making, providing students with tools that can help to understand their interpersonal and intrapersonal skills and to build mechanisms for their improvement (Fernandez, 2022). Development and validation of the Social and Emotional Competency Evaluation Questionnaire (QACSE) to become a valid and reliable questionnaire, enabling quick and appropriate application for individual or group use to carry out detailed assessments of social and emotional competence and SEL promotion programs (Coelho, 2015).

These questionnaires are generally designed for children in elementary, middle, or high school, where social and emotional skills are often seen as part of the learning process, not for young adults at the university level. Hence, there is a need for a student SEL competency assessment scale, as the transition from high school to university is a significant life event (Doygun & Gulec, 2012; Goldfinch & Hughes, 2007). While most students are eager to explore new experiences, anxiety, confusion, fear, or stress quickly sets in for many (Gibney et al., 2011). These negative emotions arise from the challenges students experience related to university life such as leaving their family, moving to a new area, becoming part of a new social network, feeling isolated, comparing themselves to other students, and becoming hopeless.

Based on some of the research results above, it can be used as a basis for developing questionnaires to measure SEL in mathematics education students in overcoming difficulties in mathematics courses. It is hoped that the results of the research will show how well the quality of the SEL is from mathematics education students so that it can produce prospective mathematics teachers who have good and positive social and emotional competence.

From a search of articles that researched the development of the SEL questionnaire, it was shown that the majority of the SEL questionnaires developed were for school students, ranging from kindergarten to high school students. There are three articles that examine the development of SEL questionnaires for university students, but the students in question are foreign language students and students in general. There has been no research on the development of SEL questionnaires that specifically measure SEL for mathematics education students . The purpose of this study was to map research trends in the development of SEL questionnaires for mathematics education students.



LITERATURE REVIEWS

Definition of *Social Emotional Learning* (SEL)

SEL development involves implementing practices and policies that help both children and adults acquire and apply knowledge, skills, and attitudes that can promote personality development, establish satisfying interpersonal relationships, and lead to effective and productive ethical work f . This includes the competence to understand and managing emotions, managing and achieving positive goals, feeling and showing care and concern others, build and maintain positive relationships, and make responsible decisions (CASEL, 2012).

SEL is the process by which we learn to recognize and manage emotions, care about others, make good decisions, behave ethically and responsibly, develop positive relationships, and avoid negative behaviors (Elias et al., 1997). SEL is a process of developing skills and competencies including recognizing and managing one's emotions, setting and achieving positive goals, respecting the perspectives of others, building and maintaining positive relationships, making responsible decisions, and handling interpersonal issues constructively. In other words, it is the process of developing the skills, attitudes and values necessary to gain social and emotional competence (Ozdemir, 2021).

SEL is also how we learn to recognize and manage emotions, care about others, make good decisions, behave ethically and responsibly, develop positive relationships, and avoid negative behaviors (Barlas et al., 2022). SEL can also be defined as the process by which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, build and maintain positive relationships, and make responsible decisions (Harris & Binfet, 2022).

The American Psychology Association defines SEL as a learning method that provides experience in maintaining cooperative relationships, making responsible decisions, managing emotions, solving problems and building empathy for others. Still reported on the APA page (2020) it is said that SEL is a teaching method that focuses on collaboration between teachers, students and parents. First, CASEL or Collaborative for Academic, Social and Emotional Learning defines SEL as a way that can be done to apply knowledge, develop social and emotional skills in order to build more positive interactions and foster empathy in children. Not far from the previous definition, Usakli (2018) also explained that SEL is a method that allows children to hone skills, beliefs and the ability to manage their emotions.

SEL equips students with the necessary competencies to deal effectively and efficiently with the various tasks and challenges of their daily life, leading to increased performance and satisfaction. SEL is a strong predictor of school achievement and is strongly associated with psychological well-being and high levels of curiosity, motivation, optimism, creativity and prosocial behavior among children and adolescents of diverse racial, ethnic and socioeconomic backgrounds, with and without emotional and behavioral problems, from different educational levels and environments (Martin et al., 2022). SEL refers to our capacity to recognize emotions in ourselves and others and manage them by appropriately organizing and setting goals, solving problems and making decisions effectively, building positive and productive relationships with others, and handling challenging situations proficiently (Edgar & Elias, 2020).

Based on the definition of SEL above, it can be concluded that SEL is a person's competency in managing emotions, solving problems and empathy for others, building positive and productive relationships, and making decisions that can be accounted for. In other words, SEL is teaching that focuses on individual self-development both emotionally and socially.

Domain of Social Emotional Learning Competency

Initially, SEL was a development of the theory of emotional intelligence and Goleman's theory of social intelligence. Goleman (in Elias, 1997) explains emotional intelligence consists of five areas, namely 1) *self-awareness* ; recognize feelings (consciousness) because of being in a real life situation; 2) *managing emotions* ; regulate emotions with strong feelings so that they are not overwhelmed and carried away by emotions, 3) *self-motivation* ; self-motivated goal-oriented and able to channel emotions toward the desired results, 4) *empathy and perspective-taking* ; empathize and recognize emotions and understand other people's points of view, 5) *social skills* , the ability to maintain relationships in a social environment. The five areas of social intelligence are used as key competencies that can be developed, practiced and strengthened in social-emotional learning (Elias, 1997). Because developing these five competencies will give birth to various positive traits and other social skills. These skills are superior characters that children need in every aspect of their life to be able to live safely and comfortably with other people. These forms were developed by *the Collaborative for Academic, Social and Emotional Learning (CASEL)* into SEL components. The components of SEL are as follows: *self-awareness, self-management, responsible decision making, social awareness, and relationship skills* (CASEL, 2015)

SEL competencies for students involve knowledge, skills, and attitudes in five domains: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. These five domains are a set of intrapersonal, interpersonal, and cognitive competencies that are interconnected and related to students' academic and social competencies at all grade levels (Yang, 2021). These five SEL competencies can be divided into sub domains, namely: 1) Self-awareness includes: individual psychological characteristics such as labeling one's feelings, linking feelings and thoughts with behavior, accurate self-assessment about strengths and challenges, self-efficacy, and optimism; 2) Self-management includes: managing one's emotions, stress management, self-control, self-motivation, and setting and achieving goals; 3) Connotative social awareness includes: perspective taking, empathy, respect for diversity, understanding social norms and ethical behavior, and acknowledging family, school, and community support; 4) Connotative relationship skills include: building relationships with diverse individuals and groups, communicating clearly, working together, resolving conflicts, and seeking help; 5) Responsible decision-making includes: considering the welfare of oneself and others, recognizing one's responsibility to behave ethically, basing decisions on safety, social, and ethical considerations, evaluating the realistic consequences of various actions and making constructive, safe choices for self, relationships, and school (Jagers et al., 2018).

Hamedani and Hammond (2015) classify SEL competencies and their indicators as follows: 1) *Self awareness* : accurately assessing one's feelings, interests, values, and strengths; maintain a well-grounded sense of self; 2) *Social awareness* : able to take perspective from and empathize with other people; recognizing and appreciating individual and group similarities and differences; recognize and use family, school, and community resources, 3) *Self-management* : regulate one's emotions to deal with stress, control impulses, and survive in overcoming obstacles; Setting and monitoring progress towards personal and academic goals; express emotions appropriately, 4) *Relationship skills* : build and maintain healthy and beneficial relationships based on cooperation; resisting inappropriate social pressure; prevent, manage, and resolve interpersonal disputes; seeking help when needed, 5) *Responsible decision-making* : making decisions based on consideration of ethical standards, safety concerns, appropriate social norms, respect for others, and the possible consequences of various actions; apply decision-making skills to academic and social situations; contribute to the well-being of one's school and community.



METHODS

This research method uses qualitative methods with a literature review approach. Data collection used the *Harzings Publish or Perish* application using data from *Google Scholar*, producing bibliometric network images from the *VOSviewer* application and strengthened by *Systematic Literature Review* (SLR) on SEL questionnaire development articles in international journals in the last 10 years (2013-2023).

RESULTS

In this study, the *Harzings Publish or Perish* application was used, which is software used to analyze bibliometric data with a focus on evaluating the impact and influence of individual research. The application was used in March 2023 to discover the novelty of the SEL questionnaire development research for mathematics education students. The analysis was carried out using data from *Google Scholar* from 2013-2023 and obtained 200 articles with the keywords *social emotional learning* and publications in the form of journals.

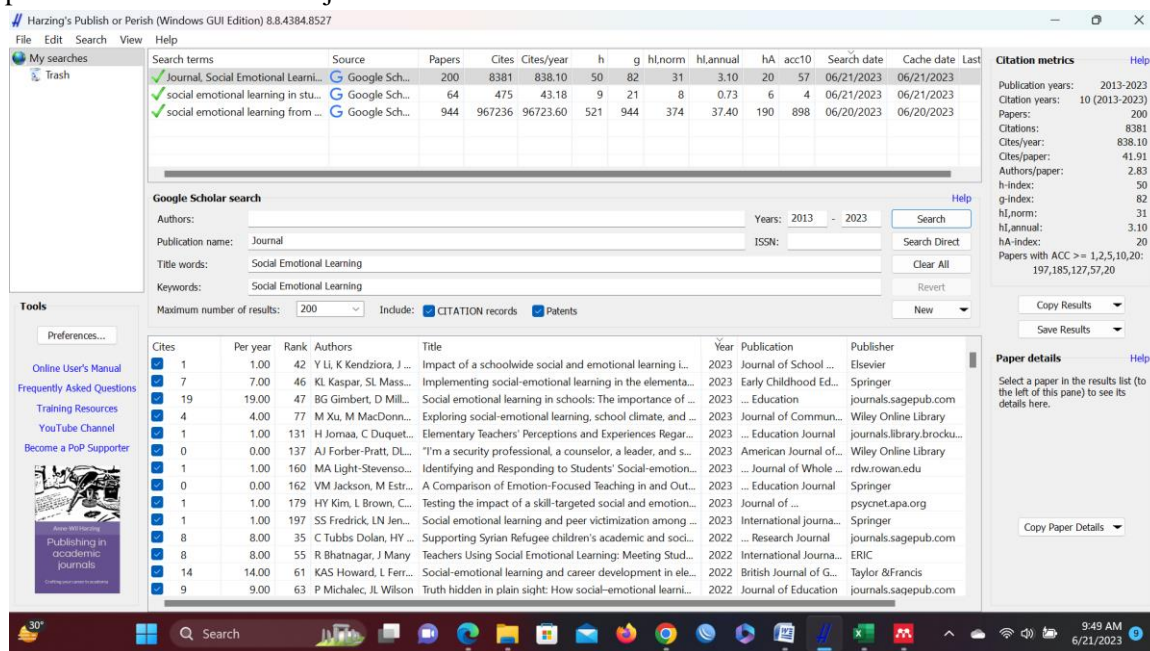


Figure 1. Update on research using the *Harzings Publish or Perish* application

VOSviewer is a widely used software for analyzing and visualizing bibliometric data, such as scientific article citation patterns. Using Vosviewer, researchers can map research trends, identify relationships between publications, and evaluate the impact of their research. The bibliometric network generated by VOSviewer from the *Harzings Publish or Perish* bibliometric database is as follows:

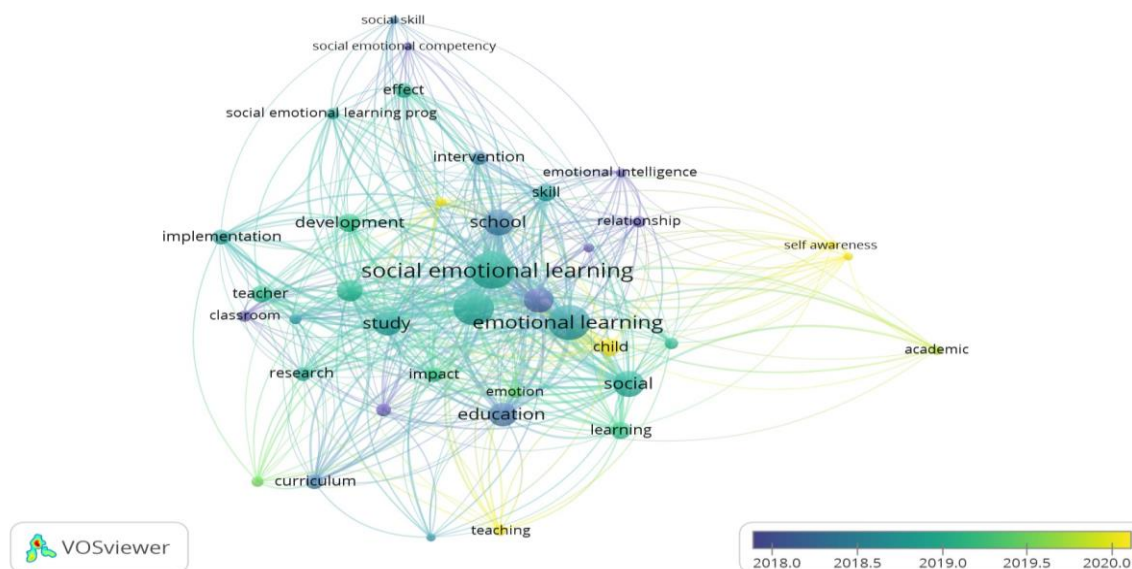


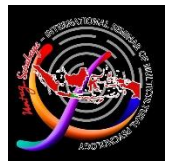
Figure 2. Bibliometric network using VOSviewer

Based on the results of bibliometric analysis using VOSviewer, it can be seen that research related to SEL includes: *emotional learning, education, social, learning, study, development, impact, school, implementation, effect, research, curriculum, child, classroom, teacher, skills, and interventions* . The latest research on SEL in 2023 deals with *impact* and *implementation* . From the figure there is no visible research related to the questionnaire, which indicates that the development of the SEL questionnaire is still rare.

To strengthen the bibliometric analysis, a *Systematic Literature Review (SLR)* was conducted on articles on the development of the SEL questionnaire from 2013 to 2023 as shown in the following table.

Table 1. SLR Searches for SEL Questionnaire Development Articles

No	Writer	Questionnaire Name	Sample	Dimensions/Competencies
1	Kilic (2022)	<i>Social Emotional Learning Questionnaire</i>	Middle school students	1. <i>Self management</i> 2. <i>growth mindset</i> 3. <i>Self-efficacy</i> 4. <i>Social awareness</i>
2	Martin (2022)	<i>Social Emotional Learning Scale</i>	Middle school students	1. <i>Self awareness</i> 2. <i>Social awareness</i> 3. <i>Self control</i> 4. <i>Interpersonal skills</i> 5. <i>Responsible decision making</i>
3	Ozdemir (2021)	<i>Social Emotional Learning Scale-Young Adult Form (SELS-YF)</i>	College students aged 18 to 24 years	1. <i>Self-Awareness</i> 2. <i>Academic Self-Regulation</i> 3. <i>Social Awareness</i> 4. <i>Responsible Decision Making</i> 5. <i>Relationship Skills</i>
4	Zaimoglu (2020)	<i>Social Emotional Foreign Language Learning Scale (SEFLLS)</i>	Students studying foreign languages	1. <i>Self-regulation</i> 2. <i>Social Relations</i> 3. <i>Decision-Making</i>



5	West (2020)	CORE Districts' SEL Survey	Grade 4 to 12 students	<ol style="list-style-type: none"> 1. <i>Self-management</i> 2. <i>growth mindset</i> 3. <i>Self-efficacy</i> 4. <i>Social awareness</i>
6	Bolts (2020)	<i>Measures of Social-Emotional Learning</i>	Grade 3 to 12 students	<ol style="list-style-type: none"> 1. <i>Self-Management</i> 2. <i>Growth Mind-Set</i> 3. <i>Self-Efficacy</i> 4. <i>Social Awareness</i>
7	Loeb (2019)	<i>School Differences in Social Emotional Learning Gains</i>	Grade 3 to 8 students	<ol style="list-style-type: none"> 1. <i>growth mindset</i> 2. <i>Self-efficacy</i> 3. <i>Self-management</i> 4. <i>Social awareness</i>
8	Stelle (2019)	<i>Measuring Social Emotional Learning Competencies</i>	High school student	<ol style="list-style-type: none"> 1. <i>motivation</i> 2. <i>Social engagement</i> 3. <i>Self-regulation</i>
9	Ulvey (2018)	<i>Social Emotional Learning Competencies Scale</i>	Students in secondary science education school	<ol style="list-style-type: none"> 1. <i>Social awareness</i> 2. <i>social isolation</i> 3. <i>Self-control</i> 4. <i>Social anxiety</i> 5. <i>establishing relationships</i>
10	Russo (2018)	<i>Social Emotional Learning Skills (SELweb)</i>	Kindergarten Children to Grade 3 Students	<ol style="list-style-type: none"> 1. <i>Social awareness</i> 2. <i>Social Meaning</i> 3. <i>Social Reasoning</i> 4. <i>Self-Control</i>
11	Isabella (2018)	<i>Social Emotional Competence Questionnaire (SECQ)</i>	College and high school students	<ol style="list-style-type: none"> 1. <i>Self awareness</i> 2. <i>Self management and motivation</i> 3. <i>Social awareness and prosocial behavior</i> 4. <i>Decision making</i>
12	Aygun (2017)	<i>Social-Emotional Learning Skills Scale</i>	Elementary school students in grades 3 and 4	<ol style="list-style-type: none"> 1. <i>Relationships among Friends</i> 2. <i>Perception of Friendship</i> 3. <i>persistence</i> 4. <i>Success</i> 5. <i>Self-Management</i> 6. <i>Impulse Control</i> 7. <i>Self confidence</i>
13	Coelho (2015)	<i>Social Emotional Competencies Evaluation Questionnaire (QACSE)</i>	High school student	<ol style="list-style-type: none"> 1. <i>Self control</i> 2. <i>Social awareness</i> 3. <i>Relationship skills</i> 4. <i>social isolation</i> 5. <i>Social anxiety</i>

From a search of 13 articles that examined the development of the SEL questionnaire, it was shown that the majority of the SEL questionnaires developed were for school students, ranging from kindergarten to high school students. There are three articles that examine the development of SEL

questionnaires for university students, but the students in question are foreign language students and students in general. There has been no research on the development of SEL questionnaires that specifically measure SEL for mathematics education students .

DISCUSSION

Recent research regarding the development of SEL questionnaires is still focused on measuring SEL for junior high school students (Martín et al., 2022)and (Kilic & Alci, 2022)and for students in general (Ozdemir, 2021) and foreign language students (Zaimoglu, 2020). In a study Martín et al. (2022)entitled *Adolescents' Emotions in Spanish Education: Development and Validation of the Social and Emotional Learning Scale*. The aim of this study was to develop and validate a scale to measure various competency areas of social and emotional learning models in students in secondary education. The results reveal sufficient questionnaire reliability and a reasonably satisfactory fit index for the proposed structural model. The Social and Emotional Learning Scale is of satisfactory metric quality and provides a detailed and consolidated picture of adolescents' levels of self-awareness, social awareness, self-control, interpersonal skills, and responsible decision-making, providing students with tools that can help to understand their interpersonal and intrapersonal skills and to build mechanisms for their improvement .

In research Kilic & Alci (2022) entitled *Validity and Reliability Study of Turkish Form of Social Emotional Learning Questionnaire*. In this study, the Social Emotional Learning questionnaire , which was originally written in English, was adapted to Turkish at the level of high school students and converted into a scale format. The questionnaire developed by West, Buckley, Krachman, and Bookman (2018) is a 5-point Likert type scale consisting of 4 dimensions and a total of 25 items. Questionnaires include Self Management, Growth Mindset, Self-Efficacy, and Social Awareness . Among these dimensions, the dimensions of self-management and self-efficacy measure students' situations in the school environment, while the dimensions of growth mindset and social awareness consist of items related to life situations in general. The Social Emotional Learning Scale is expected to provide a contribution for researchers who wish to examine secondary education levels.

In Ozdemir's research (2021) entitled *A Scale Development Study: Social Emotional Learning Scale-Young Adult Form (SELS-YF)*. SELS-YF is a valid and reliable questionnaire to measure undergraduate students' SEL skills in Turkish culture. Study participants included university students aged between 18-24 years, recruited from various public and private universities in Turkey. The results show that the SELS-YF consists of 20 items, including five dimensions, namely Self-Awareness, Academic Self-Regulation, Social Awareness, Responsible Decision Making, and Relationship Skills. The scale has a positive correlation with well-being, indicating the validity of the criteria.

In Zaimoglu's research (2020) entitled *Development of a Social-Emotional Foreign Language Learning Scale (SEFLLS) for Young Adults*. This article describes the development and evaluation of a new questionnaire to measure students' socio-emotional foreign language learning needs. A series of cross-sectional questionnaire surveys was conducted with four different samples of 1613 preparatory school students from a university to examine the psychometric properties of the 24 SEFLLS items. The results reveal a structure of three correlated factors: Self-regulation, Social Relations, and Decision Making, with an internal consistency score above 0.80. Scale scores provide sufficient evidence of internal consistency and convergent validity. Confirmatory factor analysis proved the discriminant validity of the scale. SEFLLS appears to be useful for research purposes with young adults at the university level, particularly those studying foreign languages.

Based on the description of some of the recent studies above which have developed SEL questionnaires, it appears that the development of SEL questionnaires is still very rare. So far, SEL learning has focused more on developing methods, media, approaches, and learning models in applying



social emotional abilities to students. For this reason, the development of SEL questionnaires is expected to be present in SEL learning in Indonesia. From a search of articles that researched the development of the SEL questionnaire, it was shown that the majority of the SEL questionnaires developed were for school students, ranging from kindergarten to high school students. Meanwhile, articles that examine the development of SEL questionnaires for students are still rare to find. The current SEL questionnaire is an questionnaire for foreign language students and students in general. There is no research on the development of SEL questionnaires that specifically measures SEL for students, especially for mathematics education students .

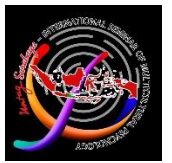
ACKNOWLEDGE, FUNDING & ETHICS POLICIES

Thank you to the Kemenristek Dikti and Lembaga Pengelola Dana Pendidikan (LPDP) as education funders. As well as the State University of Jakarta, the Postgraduate Faculty, the Educational Research and Evaluation Study Program as the tertiary institutions of study.

REFERENCE

- Bolt, D., Wang, Y. C., Meyer, R. H., & Pier, L. (2020). An IRT Mixture Model for Rating Scale Confusion Associated with Negatively Worded Items in Measures of Social-Emotional Learning. *Applied Measurement in Education*, 331–348.
<https://doi.org/10.1080/08957347.2020.1789140>
- CASEL. (2015). *Effective Social and Emotional Learning Programs*. Chicago: CASEL
- Coelho, Vitor Alexandre, Vanda Sousa & Marta Marchante. (2015). Development and Validation of the Social and Emotional Competencies Evaluation Questionnaire. *Journal of Educational and Developmental Psychology*; Vol. 5, No.1
<http://dx.doi.org/10.5539/jedp.v5n1p139>
- Durlak, J. A. (2016). Programme implementation in social and emotional learning: basic issues and research findings. *Cambridge Journal of Education*, 46(3), 333–345.
<https://doi.org/10.1080/0305764X.2016.1142504>
- Durlak, J.A., Roger P. W., Allison B. D., Rebecca D. T, Kriston B. S. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of SchoolBased Universal Interventions. *Child Development*. 82, 405 – 432
<https://doi.org/10.1111/j.1467-8624.2020.01564.x>
- Eisenberg, et al. (2006). *Handbook of Child Psychology Sixth Edition*. New Jersey: John Willey & Sons, Inc.
- Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., Kessler, R., Schwab-Stone, M. E., & Shriver, T. P. (1997). *Promoting social and emotional learning*, Alexandria, VA: Association for Supervision and Curriculum Development.
- Elias, M. J. (2019). What If the Doors of Every Schoolhouse Opened to Social-Emotional Learning Tomorrow: Reflections on How to Feasibly Scale Up High-Quality SEL. In *Educational Psychologist* (Vol. 54, Issue 3, pp. 233–245). Routledge.
<https://doi.org/10.1080/00461520.2019.1636655>

- Fernández-Martín, F. D., Moreno-Guerrero, A. J., Marín-Marín, J. A., & Romero-Rodríguez, J. M. (2022). Adolescents' Emotions in Spanish Education: Development and Validation of the Social and Emotional Learning Scale. *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14073755>
- Hamedani, MarYam G. and Linda Darling-Hammond (2015) Social Emotional Learning in High School: How Three Urban High Schools Engage, Educate, and Empower Youth.
- Jagers, R. J., Rivas-Drake, D., & Borowski, T. (2018). *Establishing Practical Social-Emotional Competence Assessments Work Group Equity & Social and Emotional Learning: A Cultural Analysis*. <http://nationalequityproject.org/>
- Jagers, R. J., Rivas-Drake, D., & Williams, B. (2019). Transformative Social and Emotional Learning (SEL): Toward SEL in Service of Educational Equity and Excellence. *Educational Psychologist*, 54(3), 162–184. <https://doi.org/10.1080/00461520.2019.1623032>
- Khasawneh, Eihab, Cameron Gosling and Brett Williams. (2021). What Impact Does Maths Anxiety Have on University Students? *BMC Psychology*. doi.org/10.1186/s40359-021-00537-2
- Kilic, C., & Alci, B. (2022). Validity and Reliability Study of Turkish Form of Social Emotional Learning Questionnaire. *E-International Journal of Educational Research*. <https://doi.org/10.19160/e-ijer.975137>
- Kose, S., Yılmaz, S. K. & Goktas, S. (2018). The Relationship Between Exam Anxiety Levels and Sleep Quality of Senior High School Students. *Journal of Psychiatric Nursing*, 9(2), 105–111. doi:10.14744/phd.2018.05025
- Kucian, K., McCaskey, U, O'Gorman Tuura, R. & von Aster, M. (2018). Neurostructural Correlate of Math Anxiety in The Brain of Children. *Translational Psychiatry*, 8(273), 1–11. doi:10.1038/s41398-018-0320-6
- Loeb, S., Christian, M. S., Hough, H., Meyer, R. H., Rice, A. B., & West, M. R. (2019). School Differences in Social–Emotional Learning Gains: Findings From the First Large-Scale Panel Survey of Students. *Journal of Educational and Behavioral Statistics*, 44(5), 507–542. <https://doi.org/10.3102/1076998619845162>
- Özdemir, Karacan N., & Büyükçolpan, H. (2021). A Scale Development Study: Social Emotional Learning Scale-Young Adult Form (SELS-YF). *Kastamonu Education Journal*, 29(4), 205–218. <https://doi.org/10.24106/kefdergi>
- Peker, M. & Ulu, M. (2018). The Effect of Pre-service Mathematics Teachers' Beliefs About Mathematics Teaching Anxiety. *International Journal of Instruction*, 11(3), 249–264. doi:10.12973/iji.2018.1138a
- Russo, J. M., McKown, C., Russo-Ponsaran, N. M., & Allen, A. (2018). Brief report: Reliability and validity of a spanish language assessment of children's social-emotional learning skills. *Psychological Assessment*, 30(3), 416–421. <https://doi.org/10.1037/pas0000508>
- Steedle, J. T., Hong, M., & Cheng, Y. (2019). The Effects of Inattentive Responding on Construct Validity Evidence When Measuring Social-Emotional Learning Competencies. *Educational Measurement: Issue and Practice*, 38(2), 101–111.



- Thomas, C. L., Zolkoski, S. M., & Sass, S. M. (2022). Investigating the Psychometric Properties of the Social-Emotional Learning Scale. *Assessment for Effective Intervention*, 47(3), 127–136. <https://doi.org/10.1177/1534508420984522>
- Ulvay, G. F., & Ozkul, A. E. (2018). Social-emotional learning competencies scale of secondary school students. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(4), 1295–1304. <https://doi.org/10.29333/ejmste/82938>
- West, M. R., Pier, L., Fricke, H., Hough, H., Loeb, S., Meyer, R. H., & Rice, A. B. (2020). Trends in Student Social-Emotional Learning: Evidence From the First Large-Scale Panel Student Survey. *Educational Evaluation and Policy Analysis*, 42(2), 279–303. <https://doi.org/10.3102/0162373720912236>
- Yang, C. (2021). Online Teaching Self-Efficacy, Social–Emotional Learning (SEL) Competencies, and Compassion Fatigue Among Educators During the COVID-19 Pandemic. *School Psychology Review*, 50(4), 505–518. <https://doi.org/10.1080/2372966X.2021.1903815>
- Zaimoğlu, S., & Sahinkarakas, S. (2021). Development of a social-emotional foreign language learning scale (SEFLLS) for young adults. *Current Psychology*. <https://doi.org/10.1007/s12144-021-02090-y>