Effects of Socio-emotional Learning Interventions before and after Pandemic: A Comparative Literature Review

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ABSTRACT

Despite the large number of studies on the benefits of socio-emotional learning (SEL) to student outcomes, its effects during the pandemic and how these differ in terms of period are understudied. This systematic literature review aims to compare the effects of SEL interventions before and during the COVID-19 pandemic. After using three databases and a study selection and quality assessment process, 40 empirical studies were included: 30 under pre-pandemic period and 10 under during pandemic period. Results revealed that the SEL interventions were still vastly positively influencing students across four learning domains in both periods. Cognitive effects were dominant across domains. Programs and strategies were dominant across intervention types. The findings indicate that SEL continues to be relevant especially in times of crisis and its implementation deserves continuity. However, issues with research design, construct validity, and study selection process are discussed to improve this review.

Introduction

One of the most important challenges in education is the socio-emotional learning (SEL) of students. CASEL, a leading organization advancing SEL, argues that it is an integral part of education and human development for it helps refine the following human characteristics: identity, emotion, goal-attainment, empathy, relationships, and decision making (Collaborative for Academic, Social, and Emotional Learning, 2013a, 2013b). There are five competencies–all addressing the knowledge, skills, and attitude domains–that are intended to be developed namely self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Weissberg & Cascarino, 2013). All these, when developed, can significantly contribute not just to schools but to the socioeconomic sectors of society (Jones & Dolittle, 2017).

SEL is also a crucial feature in the United Nations mission as manifested in the sustainable development goal (SDG) 4 whose

focal point is quality, inclusive, accessible, and lifelong education (Gulseven et al., 2020; UNESCO, 2020). However, threats to the attainment of SDG 4 were magnified during the pandemic due to school closures and other social distancing measures (Huang et al., 2020). Such measures have negatively impacted "children's lives, affecting their socio-emotional development and well-being, as well as their social life and relationships at school, which will require special attention" (UNESCO, 2020, p. 2). In recent months, school reopening has started nonetheless as school officials continue to monitor the situation and follow international and local health guidelines. UNESCO (2020) made several recommendations on school reopening as part of its learning continuity plan, and one of which refers to provision relevant to SEL, i.e., "care for mental and psycho-social wellbeing" (p. 2). It is assumed that these suggestions would help combat the negative effects brought about by the pandemic.

Locally, part of the Department of Education's (DepEd) basic education continuity plan (BE - LCP) was a discussion under the learning delivery modality and alternative learning systems about the need to pay attention to the socio-emotional needs of learners (Department of Education, 2020). Securing these needs together with the other key components of quality education would indicate a positive school environment (Ahn et al., 2022; The Aspen Institute, 2019). As for higher learning, the Commission on Higher Education (CHED) like the Philippine Normal University has implemented flexible learning schemes including online, in-person, and blended learning to provide access to quality education (2021). In response, some higher education institutions (HEIs) offered consultation with students regarding their SEL needs as part of the university's Risk Management Plan (Tuga, Jocson, & Mabunga, 2021). This effort points to the importance of soft skills which are assumed to be positively correlated with cognitive skills even at the tertiary level (Organization for Economic Cooperation and Development, 2015). In short, SEL seems to be receiving the attention it deserves from basic to higher education in the Philippines from a policy standpoint.

Overview of SEL Studies

SEL problems range from behavioral like physical aggression and violence to psychological like antisocial personality and depression among others (Esen-Aygun, 2017). Undoubtedly, teachers face a herculean task before them to still provide quality education given the fact mentioned above. Training and capacity building of teachers regarding SEL can also help reduce instances of teachers who leave the profession (McIntush, K., Zhou, X., Askari, N. H., Widdison, Y., Keese, J., Burgess, M., & Waxman, H., 2019).

Several studies have already been conducted on SEL and the consensus is that it is beneficial to students of different grade levels and sociocultural and economic backgrounds (Clarke, 2021; Mahoney, Durlak, & Weissberg, 2018). The pioneering review of SEL effects by Durlak, Weissberg, Dymnicki, Taylor, R. D., and Schellinger, K. (2011) and a follow-up review by Taylor et al. (2017) strongly argued that adding SEL is advantageous to students across learning domains. Further, Durlak and Mahoney (2019) used the findings in those reviews to account for the pragmatic implications in skills, academics, social behavior, emotional distress, attitudes, and conduct problems. In short, measurable gains have been recorded after SEL interventions have been implemented which add practical value to stakeholders. However, what seems to be lacking is the consolidation of SEL effects during COVID-19 and how these effects compare with those before the pandemic. The pandemic situation has surely elicited a whole host of challenges that require solutions from a SEL viewpoint. In addition,

comparing the SEL effects pre- and during COVID-19 can illuminate the debate whether SEL is still valuable in times of global crisis.

Socio-Emotional Interventions

There are various SEL interventions that can be implemented both in the classroom and in distance learning to help and guide students. In fact, educators are encouraged to implement different interventions to address the needs of the students specifically in their socio-emotional skills that are greatly affected by the global crisis (Gomes da Costa et al., 2021; Törmänen et al., 2021). When this intervention is implemented effectively, this will result in a positive impact and long-lasting improvement to the students' performance and behaviors as it affects their confidence level, engagement inside the class and may reduce undesirable behaviors (Greenberg et al., 2017).

Clarke et al.'s (2021) study concluded that a universal socio-emotional intervention has a great impact in improving young people's social and emotional skills that may lessen their anxiety and depression in a short period of time. Students will also have a steady mental health (Clarke et al. 2021; Cook et al., 2015). The same claim was found in the study of Domitrovich et al. (2017) where he emphasized how the results from the SEL interventions can positively affect and predict its effect until the participants reached adulthood.

Several interventions may be conducted in relation to the socio-emotional learning of the students. These are curriculum-based, course-based, program-based, strategy-based and others (see e.g., Bailey et al., 2019; Bickmore, Roberts, & Gonzales, 2020; Helms et al., 2021; Malhotra et al., 2021). Firstly, educators may adopt curriculum-based interventions that are evidence based. These are the treatment model which combines remediation of socio-emotional skills that may help the students with their cognitive, affective psychomotor, social, or psychological problems. Program-based interventions, on the other hand, include activities that are sequenced, active, focused, and explicit; that may improve behavior, social competence, and academic achievement of the students (Durlak et al., 2011; Weingarten et al., 2020).

Moreover, strategy-based interventions are hands-on, experiential-based activities that may enable students to enhance their socio-emotional skills such as concept map strategies or story telling (Betawi, 2015; Chan, 2017). Other interventions may be utilized to also enhance students' interpersonal skills.

Social Emotional Effects

SEL effects from different interventions can be taught and delivered to students in diverse situations, leading to positive school and life outcomes (Jones & Doolittle, 2017; Raimundo et al., 2013). These programs may decrease students' behavioral problems, psychological distress, and negative emotional symptoms (Valosek, et al., 2019; Wong, et al., 2014). These may also engage students in their classes or communities that may help them feel the sense of belongingness (Khusnidakhon, 2021; King, 2021; Melgoza-Lopez, 2021) and may enhance their motivation (Christel, et al., 2013; Rodríguez-Nogueira, 2020). Cristóvão, Candeias, and Verdasca (2017) asserted that SEL interventions may also be a key in establishing student initiatives, improved classroom management and may promote personal satisfaction. Moreover, students who experience these interventions may have a greater intrinsic motivation and may develop a broadly applicable set of social-emotional competencies that will give them a better academic performance and health-promoting behavior (Mahoney, Durlak, & Weissberg, 2018).

Several studies indicate that these SEL interventions are associated with positive outcomes such as increase in prosocial behavior, lower emotional distress and enhance academic performance (Blewitt et al., 2018; Weissberg et al., 2015; Collaborative for Academic, Social, and Emotional Learning, 2013a). There are also school-based programs and strategies which involve a delivery of the curriculum that promotes socio-emotional competencies that are culturally appropriate (Collaborative for Academic, Social, and Emotional Learning, 2013a).

In the study of Murano et al. (2020), it is implied that when socio-emotional intervention is effectively delivered, it may reduce the school readiness gap that is associated with behavioral problems and may provide children with skills that promote resilience and success at school entry. It was also emphasized that effective SEL interventions for preschool children share some common features but vary in the degree to which they target behavioral, cognitive, and/or emotional skills.

On the other hand, a study by Zieher et al. (2021) implemented a crisis response educator SEL survey during pandemic to examine SEL implementation. The result of this study revealed that socio-emotional needs lower levels of challenge in implementing SEL interventions.

Another study by Bardach et al. (2021) discussed the power of feedback and reflection that is useful in distance learning. In this article, it used a strategy called scenario-based learning approach which boosts students' readiness and self-efficacy which also improves cognitive classroom readiness that may help students during this global crisis.

The element of SEL and its effects on online students is under-researched in current socio-emotional learning literature reviews. In the future, it appears that SEL should be included at times of crisis to improve management (Sharin, 2021). Based on a national study, several studies argue that additional research on SEL is needed because it is one of the primary concerns of teachers (Huck & Zhang, 2021). Furthermore, during COVID-19 pandemic, there have been contradictory findings on the effects of SEL on online students. This research evaluated the effectiveness of SEL interventions in the pre-pandemic era and during the pandemic era to determine if these contradictory findings have anything to do with the present crisis that students and society are facing. In this literature review, the authors attempted to answer how the SEL effects from different interventions differ in two periods, that is, before and during the COVID-19 pandemic.

Figure 1.

Socio-Emotional Learning Framework in relation to Time Periods

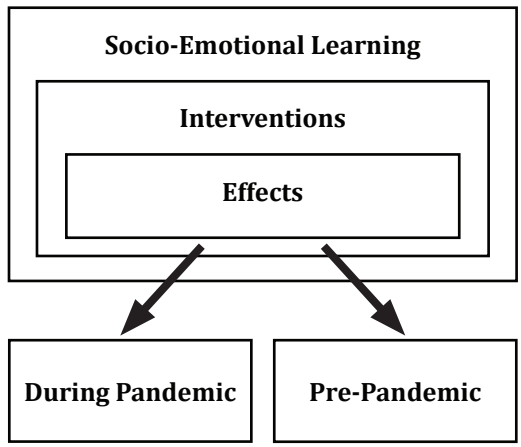


Figure 1 shows the conceptual framework of this comparative systematic review. SEL is the overarching concept while the effects of interventions were investigated and compared based on two time periods: pre-pandemic (PP) and during pandemic (DP).

Purpose of the Research

This comparative literature review aimed to compare the effects of SEL interventions before and during the pandemic. Specifically, it sought answers to the following questions:

1. What are the effects of SEL interventions before and during the COVID-19 pandemic?
2. How do these effects differ in terms of time periods?
3. Which type of SEL interventions has the most common effect in each period?

Methodology

Search Strategy and Study Selection

This comparative literature review categorized literature in two time periods, namely: *Pre-Pandemic* (PP) (published between 2015 and 2019); and *During Pandemic* (DP) (published between 2020 and 2021). The intent of the search was to collect peer-reviewed journal articles that identified the effects of SEL interventions before and during the COVID-19 pandemic.

Inclusion and Exclusion Criteria

All journal articles were further assessed based on the inclusion/exclusion criteria as can be seen in Table 1. In terms of research

Table 1

Inclusion/Exclusion Criteria for Reviewed Studies

Category	Included	Excluded
Research Design	Quantitative: descriptive, correlational, causal-comparative, quasi-experimental, experimental; qualitative: phenomenology, ethnography, case study, action research; mixed-methods	Grounded theory, historical research, document or content analysis, systematic review, meta-analysis, meta-synthesis
Setting	School (university, high school, middle school, elementary school kindergarten), training center, home-based, remote, online, hybrid or mixed	None
Type of Intervention	Curriculum-based, course-based, program-based, strategy-based, model-based	None
Type of Journal Article	Original research	Short reports or letters, review articles, methodologies or methods, thesis, dissertations, capstone research project
Publication Date	Pre-pandemic: from 2015 to 2019 During pandemic: from 2020 to 2021	Articles published before 2015
Study Participants	All students, male and female, all nationalities, all levels	Teachers, parents, school administrators, other school officials, non-students

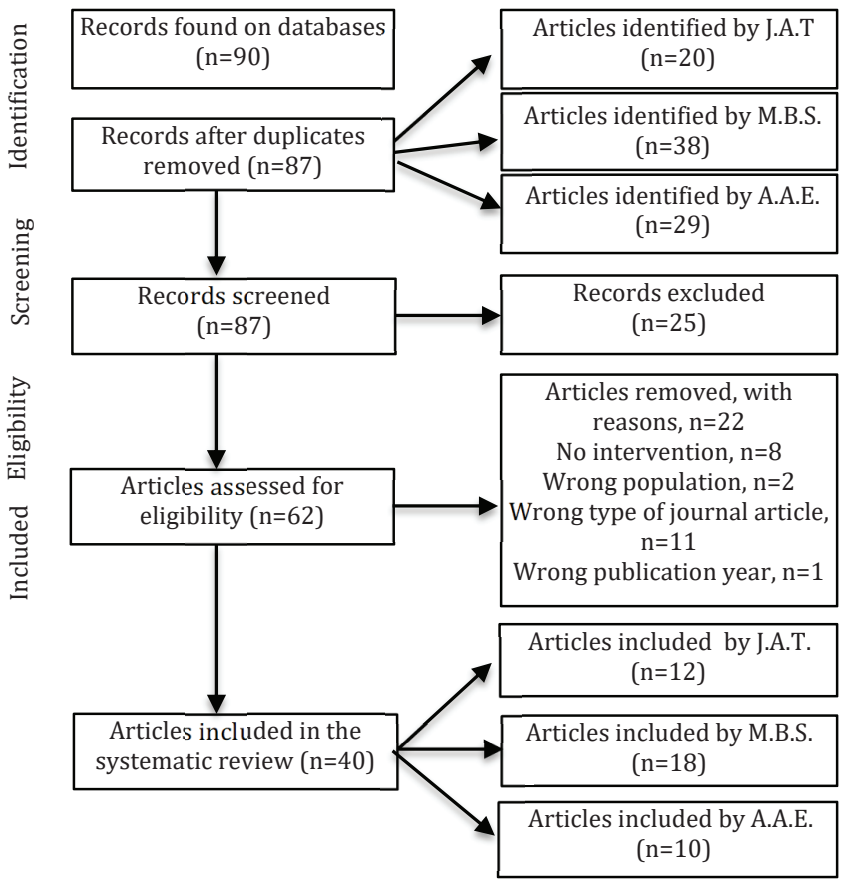
design, included articles can be various types of quantitative, qualitative, or mixed methods except grounded theory, historical research, document, or content analysis, etc. The publication date ranges from 2015 to 2021 which is divided into PP (2015 to 2019) and DP (2020 to 2021). Anything earlier than 2015 is removed. Lastly, the participants/subjects in the included articles must be students. If they are mixed with other participants like teachers or parents, then, only the data relevant to students will be included.

Review Procedures and Data Abstraction

The systematic search found a total of 90 articles (Figure 2). In terms of the data extraction process, the following elements were included: research questions, research gaps, theory, participants, setting, materials, research design, procedures, measures, data analysis, findings/results, limitations/future directions, discussion/implications, and conclusion.

Figure 2.

Flow diagram of articles included and excluded in the review



Quality of Evidence

Using a checklist developed by the University of Glasgow for studies on an educational intervention, which they adapted from the Education Group on Guidelines on Evaluation (1999) and Morrison et al. (1999), this review assessed the study quality. The instrument is divided into four sections asking the following main questions, respectively: (1) Does the study address a clear question? (2) Are the results valid? (3) What were the results? (4) Are the results applicable to my setting? Sub-questions were included in each section to provide a more comprehensive guidance to the reviewers. The instrument's suitability was varied as it can be applied to quantitative, qualitative, and mixed-methods research designs. A rating scale ranging from 1 (high quality) to 3 (low quality) was employed. Descriptive sub-questions were used as further qualifying factors.

Results

Summary of SEL Effects

Positive Effects. There was a total of 76 positive effects of SEL in PP. Results under the cognitive domain accounted for 28.95% (creativity/innovativeness; perception and expectation; purpose; culture; academic/grade; executive function [attention, working memory, cognitive flexibility]; self-concept or self-awareness; knowledge of asking for help; linguistic development; and improvement in dissociation).

Affective-oriented results yielded 19.75% (emotional regulation; motivation; self-esteem/confidence; emotional intensity; attachment; delay of gratification; empathy; and emotional intelligence). The psychomotor/social-oriented results accounted for 28.95% (active participation; interpersonal/social skills; sense of capability; resourcefulness; connectedness; reduction of disciplinary incidents; reduction of physical and verbal aggression; reduction in antisocial traits; inhibition/impulsivity/self-control, and reduction and victimization). Finally, the mixed/psychological effects tallied 22.36%. These included the following: self-efficacy (adaptation and coping); psychological health; identity; resilience; SEL characteristics; instructional facilitation; improvement of self-centeredness; peer acceptance; reduction of relational victimization; student engagement; self-development; social competence; and effortful control.

There was a total of 30 positive effects of SEL in DP. Results under the cognitive category accounted for 30% (cognitive classroom readiness; academic performance; cognitive engagement; online learning engagement; content understanding; and reflective practice). The rest of the categories tallied 23.33% each. The affective-oriented results show emotional engagement, online academic hardiness (commitment and challenge); overall emotional quotient (emotional self-control, self-encouragement, confidence, empathy); and regulation. The psychomotor/social-oriented results included behavioral engagement; task-related interaction (shared knowledge building, productive task completion, on-task behavior); violent behavior prevention; and social efficacy (girls). Lastly, results under the mixed/psychological category were engagement; psychological capital; socio-emotional skills; and improvement of psychosomatic symptoms (feeling low).

There was a total of 4 negative SEL effects in the PP period. Fifty percent came from the cognitive domain (attentional performance and academic efficacy). The other 50% came from the affective domain (self-esteem [boys] and emotional engagement). No data were recorded for psychomotor/social and mixed/psychological results. However, in the DP period, there were no negative effects of SEL intervention for all the categories.

There was a total of 11 neutral or no significant effects of SEL interventions in PP. Results under the cognitive category accounted for 36.36% (academic achievement, competent problem solving, and metacognition). The same percentage was recorded for the affective results (attitude school belonging; callous-unemotional [C/U] and manipulativeness, and emotional regulation. The results for psychomotor/social-oriented effects (behavioral engagement, suspension rates, and social skills) tallied 9.09%; and (18.18%) resulted from the mixed/psychological category (role perception and victimization).

There was a total of 17 neutral/no significant effects of SEL in DP. No cognitive-oriented effects were recorded. Those under the affective domain are as follows: satisfaction with school, self-efficacy in regulating positive emotions and negative emotions, school self-esteem, and interest in study. The psychomotor/social-based results included prosocial behavior (relationship with teachers and peers), physical and verbal aggression, alcohol use, improvement in physical inactivity, and improvement in unhealthy eating habits. Lastly, subjective psychological well-being (environmental mastery, self-acceptance); subjective health status; and psychosomatic symptoms comprised the mixed/psychological effects.

There was a total of 4 results in mixed effects in PP. Results under psychomotor/social accounted for 50% (aggression, social skills. Both cognitive (academic) and affective (self-esteem) outcomes yielded 25% each. No mixed/psychological data were recorded. In DP, only one study recorded a mixed effect. The effect was under the affective domain of self-regulation.

Discussion

This comparative systematic literature review aimed to compare the effects of SEL interventions on student outcomes prior to and during the global health crisis. As such, the following research questions were devised: 1) What are the effects of socio-emotional learning interventions before and during the COVID-19 pandemic? 2) How do these effects differ in terms of time periods? 3) Which type of SEL interventions has the most common effect in each period?

Based on the data analysis, several key findings emerged. Firstly, the effects of SEL interventions on student outcomes were varied for either period, but more so in PP. These effects were either positive, negative, neutral, or mixed. Further categorization of effects resulted in the conception of four domains relevant to education viz. cognitive, affective, psychomotor/social, and mixed/psychological.

Secondly, the differences among these effects were also variable either intra-period or inter-period; however, there was more overall variability in the former. The intra-period variations for PP in terms of mere frequency count of positive effects under each domain range from 8 (i.e., affective) to 14 (mixed/psychological). For DP, the range was 4 to 6. The inter-period variations, on the other hand, pointed to the advantage of PP over DP in terms of the total number of effects for each domain. Domain-level comparison of specific effects saw academics/grades (cognitive); overall emotional quotient and emotional regulation (affective); violent behavior prevention and aggression reduction (psychomotor/social); and SEL characteristics or skills (mixed/psychological) as the enduring student outcomes for both periods. For negative effects, PP yielded 2 each for cognitive and affective domains. None was recorded for DP. For neutral effects, intra-period variations in PP were small in that the number of effects

for each domain was the same except for mixed/psychological domain. In DP, there was a slightly higher variation, 3 to 5, but no record was found under the cognitive domain. The inter-period differences showed a rather interesting pattern. Except for the cognitive domain, DP outnumbered PP in terms of domain-level comparison of the number of effects. Emotional regulation (affective) and social skills (psychomotor/social) were seen as the consistent student outcomes that yielded neutral effects for both periods. And for mixed effects, the intra-period variation in PP saw the decreasing number of effects for 3 domains. In DP, only the affective domain yielded an effect. The inter-period variations clearly favored PP.

Thirdly, the most common intervention type in PP after combining the positive, negative, neutral, and mixed effects was program (72.41%); curriculum (11.49%); strategy (9.20%); course (3.45%) and others garnering (3.45%). In DP, it showed program type (56.76%) and strategy (43.24%) after the combined effects.

What are the effects of SEL interventions before and during the COVID-19 pandemic?

Findings suggest that SEL interventions will typically yield positive effects on student outcomes across educational domains and regardless of time periods. As positive effects remarkably outnumbered all other categories in both PP and DP, it is logical to pursue this research interest. The results can be compared to those of Duncan et al. (2017) in which SEL programs had a favorable impact on various SEL trajectories and behavioral issues among basic education students. Durlak et al.'s (2011) meta-analysis also yielded favorable effects of a SEL intervention on kindergartens' SEL characteristics including academic achievement. Gueldner's (2020) book summarizes the overwhelming evidence favoring SEL interventions among school-age children across settings, student profiles, and learning domains. Likewise, Taylor et al.'s (2017) meta-analysis focusing on K-12 students' well-being, among others, also yielded positive results of school-based universal SEL interventions at follow-up. The only notable difference between the research above mentioned and this review pertains to the year of publication. Those studies were conducted prior to the pandemic which made it arguably easier for researchers to carry out their investigations. Nonetheless, this review still makes contributions in examining how SEL interventions would affect student outcomes before and during the pandemic. The review imparts additional evidence as to the longevity of SEL effects and its importance even, and especially, during a critical disruption.

How do these effects differ in terms of time periods?

Results suggest that there is not much difference between SEL effects in PP and those in DP. In fact, there seems to be a similar trend between the two periods in the ranking of effects. Favorable outcomes ranked first, followed by neutral, mixed, and negative effects, respectively. Although it should be noted that the two lowest ranked effects in PP were tied while those in DP found the negative effects to be at the bottom. The overwhelming evidence for the favorable impact of SEL is also reflected in the latest systematic review of Clarke et al. (2021) and the study of Domitrovich et al. (2017). The former laid out how SEL benefits young people in their socio-affective skills, mental health, suicidal tendencies, misdemeanor, bullying, and sexual violence. The latter discussed how the early positive effects of SEL can endure even in adulthood. As argued by Durlak (2015), SEL interventions, if done rigorously and consistently, would produce more positive student outcomes which go beyond academic grades and address the growing diversity in schools and community.

Which type of SEL interventions has the most common effect in each period?

Results suggest that the popularity of program-based interventions spilled over from PP to DP. However, the surge of strategy-based interventions in DP, highest in this period indicates that small-scale interventions were more feasible given the health crisis that participants and researchers encountered. It can be argued that constraints put upon the students, teachers, administrators, and investigators prevented the usual conduct of any large-scale interventions like program, course, and curriculum. As the great majority of studies in PP were done in person, not online, it can be inferred that the new educational setup in DP challenged many indeed.

Limitations

The effects of SEL interventions on student outcomes were skewed in favor of PP studies mainly due to the design structure of the review. PP's publication year range is from 2015 to 2019 while DP is from 2020 to 2021. This difference alone yielded more effects for PP. Due to the small number of sorted articles from the available databases, it only provides a limited study of what SEL would have been throughout the pandemic time. If more journals from the pandemic were gathered, the comparison between the two eras could be more thorough. However, the intent of the review is not to merely compare the number of effects in terms of period but to draw patterns of effects that seem to have consistently been investigated regardless of circumstantial constraints in research production and publication. Another limitation pertains to the conception of two domains namely psychomotor/social and mixed/psychological. It can be argued that the psychomotor domain differs from the social domain in several ways theoretically and practically. One can manifest psychomotor characteristics without social orientation. The same case for the mixed/psychological domain can be argued. As some effects are difficult to classify, they were conveniently grouped into this broad category which could be further specified for a more thorough analysis. Furthermore, some studies' sample sizes are so small that it is difficult to appropriately determine significant effects and correlations from the data, as statistical tests often require a larger sample size. Some studies contain sample biases since they solely focus on one school or university, and that factor cannot be generalized.

Conclusion

Comparing the effects of SEL interventions before and during the pandemic was the aim of the present review. If left unchecked, the behavioral and affective problems would continue to negatively impact students' academic and social lives. Given the complex reality of the fourth industrial revolution, students with poor SEL competencies are more likely to suffer.

This study, however, found SEL interventions to be remarkably effective to student outcomes in either period or regardless of intervention types, suggesting that teachers continue to implement them. The positive effects spanned across the four learning domains, the most positive of which pertained to improvement specifically in academic performance.

While many Philippine schools have already adopted various learning modalities to combat COVID-19, it is crucial not to ignore activities that promote SEL whether these are standalone or packaged into a larger program or course. At any rate, SEL has proven to endure and, hence, its continuity paves the way for a brighter outlook for education and society.

Recommendations

It is recommended that the research design be relatively similar in the number of collected studies for each period. For example, since DP is expected to be extremely limited, an additional database could be included. A formal scoping review prior to this comparative review can also ensure that the DP studies will have enough data to be compared to those of PP. Another recommendation is to separate the categories of psychomotor/social and mixed/psychological individually. In this way, precise classification of effects and strong validity of constructs will be achieved. Finally, a more thorough selection of articles that meet stricter inclusion/exclusion criteria will ascertain the transferability of the findings of qualitative studies.

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