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Enhancing Students' Socio-Emotional Competence through Digital Social–Emotional Learning (SEL) Modules in Government Schools of Haryana: A Mixed-Methods Intervention Study

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Abstract: Socio-Emotional Learning (SEL) has gained significant attention as a critical component of holistic education, particularly in the context of adolescents' mental well-being and academic engagement. In line with the National Education Policy (NEP) 2020, the present study examines the effectiveness of digitally delivered SEL modules in enhancing socio-emotional competence among middle-school students in government schools of Haryana. A mixed-methods intervention design was employed involving 240 students from Classes VI to VIII across selected schools in Jhajjar and Bahadurgarh. Quantitative data were collected using standardized SEL scales and behaviour checklists, while qualitative insights were gathered through interviews and classroom observations. The intervention was implemented over a period of sixteen weeks using culturally contextualized digital learning materials. Findings indicate a significant improvement in students' emotional regulation, peer relationships, self-confidence, and classroom engagement. Teachers also reported improved classroom climate and reduced behavioural issues. The study highlights the potential of digital SEL as a scalable and inclusive educational intervention for government schools and offers policy-relevant recommendations for state-wide implementation.

Keywords: Socio-Emotional Learning, Digital Education, Adolescents, NEP 2020, Government Schools, Haryana

1. Introduction

Education in contemporary societies is increasingly recognized as a multidimensional process that extends beyond academic instruction to encompass learners' social, emotional, and psychological development. Rapid socio-cultural changes, heightened academic pressures, and increased exposure to digital environments have significantly influenced students' emotional well-being, interpersonal relationships, and behavioural patterns. In this context, Socio-Emotional Learning (SEL) has emerged as a critical educational framework aimed at fostering emotional awareness, self-management, empathy, positive relationships, and responsible decision-making among students.

Socio-Emotional Learning refers to the process through which individuals acquire and apply knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve goals, demonstrate empathy for others, establish healthy relationships, and make constructive choices. Extensive international research has demonstrated that effective SEL programs contribute to improved academic achievement, reduced behavioural problems, enhanced student engagement, and long-term psychological well-being. Consequently, SEL is increasingly regarded as an essential component of holistic education rather than an optional or supplementary intervention. In the Indian educational landscape, the **National Education Policy (NEP) 2020** explicitly emphasizes the integration of life skills, emotional resilience, ethical values, and mental well-being within school curricula. The policy advocates a learner-centric approach that nurtures cognitive, social, and emotional competencies in a balanced manner. Despite this strong policy mandate, the implementation of structured, curriculum-embedded SEL programs remains limited, particularly within

government school systems. Challenges such as inadequate teacher training, lack of specialized mental-health professionals, overcrowded classrooms, and limited instructional resources hinder the effective integration of SEL into everyday classroom practices.

Government schools in the state of Haryana, especially in rural and semi-urban regions, face additional concerns related to adolescent stress, behavioural difficulties, peer conflicts, and declining student engagement. The absence of systematic socio-emotional support mechanisms often places teachers under pressure to manage students' emotional and behavioural needs alongside academic responsibilities. Adolescence, typically spanning the ages of 11 to 14 years, is a critical developmental period marked by rapid emotional, social, and cognitive changes. Without appropriate preventive interventions, socio-emotional challenges during this stage may negatively affect academic performance, school retention, and overall well-being. At the same time, India's growing emphasis on digital education through initiatives such as **Digital India**, **PM e-Vidya**, and state-level digitalization programs presents new opportunities to address these challenges. Digital platforms offer flexible, scalable, and engaging modes of delivering SEL content, particularly in contexts where access to trained counsellors is limited. Digital SEL modules can incorporate multimedia elements, interactive activities, and reflective exercises that are developmentally appropriate and culturally relevant, thereby enhancing student engagement and learning outcomes.

Against this backdrop, the present study seeks to design, implement, and evaluate **digital Socio-Emotional Learning modules** tailored to the socio-cultural context of government schools in Haryana. Employing a mixed-methods intervention approach, the study examines the impact of a sixteen-week digital SEL program on students' emotional regulation, self-

esteem, peer relationships, behaviour, and classroom engagement. By generating empirical evidence and contextual insights, the study aims to contribute to the growing discourse on SEL in Indian schools and to provide practical recommendations for policy-level integration and large-scale implementation.

1. Review of Literature

Socio-Emotional Learning (SEL) has emerged as a significant area of educational research due to its strong association with students' academic success, mental well-being, and social adjustment. Over the past two decades, extensive research across diverse educational contexts has highlighted the importance of integrating socio-emotional competencies within school curricula to promote holistic development. The literature on SEL can broadly be categorized into theoretical foundations, empirical evidence on effectiveness, digital SEL interventions, and the Indian context of SEL implementation.

Theoretical Foundations of Socio-Emotional Learning

The conceptual framework of SEL is grounded in developmental psychology and social learning theories. CASEL (Collaborative for Academic, Social, and Emotional Learning) identifies five core competencies of SEL: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. These competencies align with Bandura's social learning theory, which emphasizes learning through observation, interaction, and reflection, as well as with emotional intelligence theories proposed by Goleman, highlighting the role of emotional awareness and regulation in personal and social functioning. Research indicates that these competencies are particularly crucial during adolescence, a developmental stage characterized by emotional volatility and heightened social sensitivity.

Impact of SEL on Academic and Behavioral Outcomes

A substantial body of empirical research demonstrates the positive impact of SEL programs on students' academic achievement and behavioural outcomes. Meta-analytical studies by Durlak et al. and Weissberg et al. report that students who participate in structured SEL programs show significant improvements in academic performance, classroom behaviour, emotional regulation, and peer relationships. SEL interventions have also been associated with reductions in anxiety, stress, aggression, and school dropout rates. These findings underscore the preventive and promotive role of SEL in fostering positive school climates and long-term student well-being.

Digital and Technology-Enabled SEL Interventions

With the increasing integration of technology in education, recent studies have explored the effectiveness of digital and blended SEL interventions. Digital SEL programs leverage multimedia resources, interactive activities, and self-paced learning to enhance student engagement and accessibility. Research suggests that technology-enabled SEL interventions can be particularly effective in resource-constrained settings where access to trained mental-health professionals is limited. Studies conducted in international contexts indicate that digital SEL modules can yield outcomes comparable to traditional face-to-face interventions when they are developmentally appropriate, culturally relevant, and supported by teacher facilitation.

SEL in the Indian Educational Context

In India, the relevance of SEL has gained renewed attention following the introduction of the National Education Policy (NEP) 2020, which emphasizes life skills, emotional well-being, and value-based education. NCERT has also advocated the integration of socio-emotional competencies through curricular and co-curricular activities. However, existing Indian studies reveal that SEL implementation remains fragmented and largely informal, often dependent on individual teacher initiatives rather than structured programs. Research focusing on Indian government schools highlights challenges such as lack of teacher training, limited institutional support, and absence of standardized SEL tools, particularly in rural and semi-urban areas.

Research Gaps Identified in the Literature

Despite growing recognition of SEL's importance, the literature reveals several gaps. First, there is a scarcity of empirically validated, curriculum-integrated SEL programs tailored to the Indian socio-cultural context. Second, limited research has examined the use of digital platforms for SEL delivery in government schools. Third, few studies employ mixed-methods designs to capture both measurable outcomes and stakeholder perceptions. Lastly, there is a lack of region-specific evidence from states such as Haryana, particularly focusing on adolescents in middle school settings.

Rationale for the Present Study

In light of these gaps, the present study seeks to contribute to the existing literature by designing and evaluating a culturally contextualized digital SEL intervention for government schools in Haryana. By adopting a mixed-methods approach, the study aims to generate empirical evidence on the effectiveness of digital SEL modules while also capturing the perspectives of students and teachers. The findings are expected to inform educational practice, teacher training, and policy-level decision-making, thereby strengthening the integration of socio-emotional learning within the Indian school education system.

In the Indian context, the National Education Policy (NEP) 2020 underscores the importance of life skills, emotional well-being, and value-based education. NCERT has also advocated the integration of socio-emotional competencies within school curricula. However, existing Indian studies reveal that SEL implementation remains fragmented and largely informal, with limited availability of structured, curriculum-embedded programs. Research focusing on government schools highlights challenges such as inadequate teacher training, lack of standardized tools, and minimal use of digital platforms for SEL delivery, particularly in rural and semi-urban settings.

Overall, the literature establishes the significance of SEL but indicates a need for context-specific, technology-enabled interventions supported by empirical evidence, especially within Indian government school systems.

2. Research Gap

The critical review of literature reveals several unresolved gaps:

1. While SEL is well-established theoretically, there is a lack of **context-specific, empirically validated SEL programs** within Indian government school systems.
2. Research on **digital SEL interventions** in India is scarce, despite rapid expansion of digital education initiatives.

3. Existing studies often focus on either outcomes or perceptions; **mixed-methods investigations** capturing both dimensions remain limited.
4. Adolescents in **Classes VI–VIII**, a critical developmental phase, are underrepresented in SEL intervention research.
5. There is minimal region-specific evidence from **Haryana**, particularly in rural and semi-urban government schools.

The present study addresses these gaps by developing and empirically testing a culturally contextualized digital SEL intervention using a mixed-methods approach.

3. Objectives of the Study

The objectives of the present study are:

- To examine the baseline socio-emotional competence of middle-school students in government schools of Haryana.
- To design and implement digital SEL modules aligned with NEP 2020 and adolescent developmental needs.
- To evaluate the impact of a 16-week digital SEL intervention on students’ emotional regulation, self-esteem, peer relationships, and classroom engagement.
- To explore teachers’ perceptions regarding feasibility and effectiveness of digital SEL integration.
- To generate evidence-based recommendations for scalable SEL implementation in government schools.

4. Research Questions

- What is the existing level of socio-emotional competence among middle-school students in government schools of Haryana?
- Does participation in digital SEL modules significantly enhance students’ socio-emotional competencies?
- How do teachers perceive the relevance, usability, and impact of digital SEL modules?
- What contextual factors influence the successful implementation of digital SEL interventions?

5. Methodology

Research Design: The study adopted a **mixed-methods approach** using a **pre-test–post-test experimental design** with control and experimental groups.

Sample: The sample consisted of **240 students** (120 experimental and 120 control) from four government schools in Jhajjar and Bahadurgarh, Haryana. Additionally, **20 teachers** participated in the qualitative component of the study.

Table 1: Demographic Profile of the Sample

Variable	Experimental Group (n = 120)	Control Group (n = 120)
Gender (Boys)	62	60
Gender (Girls)	58	60
Class VI	40	41
Class VII	42	39
Class VIII	38	40

Source: Field data collected by the investigator

Tools and Instruments

- Standardized Socio-Emotional Competence Scale

- Behaviour Observation Checklist
- Student Engagement Logs
- Semi-structured Interview Schedules (Teachers and Students)

Intervention

The experimental group received a **16-week digital SEL intervention**, which included:

- Short animated videos
- Digital stories
- Interactive worksheets
- Reflective activities

The modules focused on emotional awareness, self-management, empathy, communication, and responsible decision-making.

Intervention Design

Figure 1 illustrates the mean gain in socio-emotional competence scores of students in the experimental and control groups after the 16-week digital SEL intervention.

Figure 1: Structure of Digital SEL Intervention



Figure 1. Structure of Digital Social–Emotional Learning (SEL) Intervention

Description:

Figure 1 illustrates the systematic structure of the digital SEL intervention adopted in the study. The intervention followed six sequential stages: (i) baseline assessment of students’ socio-emotional competence, (ii) development of culturally contextualized digital SEL modules, (iii) teacher training and orientation, (iv) classroom implementation over a sixteen-week period, (v) continuous monitoring and academic support, and (vi) post-intervention assessment and evaluation.

Stages included in the figure:

- Needs Assessment (Baseline SEL)
- Module Design (Digital Content)
- Teacher Training
- Classroom Implementation (16 Weeks)
- Monitoring and Support
- Post-test and Evaluation

6. Data Analysis

To evaluate changes in students' socio-emotional skills prior to and during the intervention, **quantitative data** were examined using both **descriptive and inferential statistical methods**. The baseline and post-intervention SEL levels were summarized using descriptive statistics such as mean scores and standard deviations. To evaluate the efficacy of the digital SEL intervention, inferential analyses were carried out to ascertain the statistical significance of changes between the experimental and control groups.

Thematic analysis was used to examine **qualitative information** gathered from teacher interviews, student reflections, and classroom observations. Participants' perceptions, experiences, and interactions with the digital SEL modules were coded,

categorized, and interpreted in a methodical manner. The validity and depth of the study's conclusions were strengthened by the triangulation made possible by the integration of quantitative and qualitative findings

7. Results

According to the study's findings, pupils in the experimental group showed a **statistically significant improvement in socioemotional competence** when compared to those in the control group. Students who participated in the digital SEL intervention demonstrated marked gains across multiple dimensions of socio-emotional development.

Notable improvements were observed in:

- **Emotional regulation**, reflected in better management of stress, anger, and classroom emotions
- **Self-esteem and confidence**, evidenced by increased participation and self-expression
- **Peer interaction and cooperation**, including improved communication and collaborative behaviour
- **Classroom engagement**, such as sustained attention, active involvement, and positive learning attitudes

Teachers reported a **visible reduction in disruptive and off-task behaviours**, alongside improved student attentiveness and cooperation. Qualitative findings reinforced the quantitative results, indicating high levels of acceptance, relevance, and engagement with the digital SEL modules. Participants perceived the intervention as meaningful, relatable, and beneficial to everyday school experiences.

Quantitative Results

Table 2: Pre-test and Post-test Mean Scores of Socio-Emotional Competence

Group	Pre-test Mean Score	Post-test Mean Score	Mean Gain
Experimental Group	62.4	78.6	16.2
Control Group	61.9	64.2	2.3

Note: Higher scores indicate higher socio-emotional competence.

Comparative Outcomes

Figure 2: Comparison of SEL Improvement between Groups

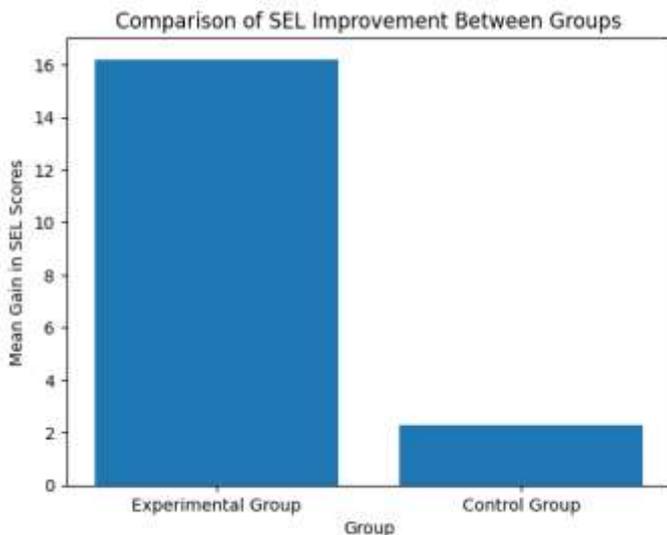


Figure 2. Comparison of Socio-Emotional Learning (SEL) Improvement between Experimental and Control Groups

To visually represent the difference in SEL gains between groups, Figure 2 presents a comparative analysis of mean gain scores.

Description

Figure 2 presents a comparison of the mean gain in socio-emotional competence scores between the experimental and control groups. The experimental group, which received the digital SEL intervention, showed a substantially higher improvement in SEL scores compared to the control group, indicating the effectiveness of the intervention.

8. Discussion

The findings of the present study strongly affirm the **effectiveness of digital Socio-Emotional Learning interventions** in enhancing adolescents' socio-emotional competencies. The observed improvements align with existing international research that identifies SEL as a critical contributor to students' academic success, emotional well-being, and positive behavioural outcomes. The study extends this body of research by demonstrating the applicability of SEL within the Indian government school context through digital means.

The culturally contextualized design of the digital SEL modules played a crucial role in ensuring relevance, accessibility, and sustained student engagement. By incorporating familiar social situations and developmentally appropriate activities, the intervention resonated with students' lived experiences. Furthermore, the findings highlight that **technology-enabled SEL can function as a feasible and scalable alternative** in educational settings where access to trained mental-health professionals and counsellors is limited.

Teacher feedback emphasized the importance of embedding SEL within daily classroom practices rather than treating it as a standalone or supplementary program. This integration-oriented approach not only enhanced the effectiveness of the intervention but also contributed to a more supportive and emotionally responsive classroom environment.

9. Conclusion

Strong **empirical evidence** is presented in this study to support the integration of digital SEL modules in government schools of Haryana. The intervention significantly enhanced students' socio-emotional competence while simultaneously fostering a positive classroom climate and improved student-teacher interactions. The findings reinforce the holistic vision of education outlined in the **National Education Policy (NEP) 2020** and underscore the urgent need for policy-level adoption of structured, curriculum-integrated SEL programs in Indian schools.

By demonstrating the effectiveness of a culturally relevant, technology-based SEL model, the study contributes meaningfully to educational research, practice, and policy discourse.

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