



ARTIFICIAL INTELLIGENCE AND SOCIAL-EMOTIONAL LEARNING AS TOOLS FOR PREVENTING ANTISOCIAL BEHAVIOR IN SCHOOLS

Zarrina B. Davronova

Independent Researcher, Bukhara State University, Bukhara, Uzbekistan

Article history:		Abstract:
Received:	26 th April, 2026	This study examines the role of artificial intelligence (AI) and social-emotional learning (SEL) in preventing antisocial behavior among school students within contemporary educational environments. The research analyzes the pedagogical, psychological, and social factors contributing to the development of antisocial behaviors, including aggression, cyberbullying, social isolation, disruptive conduct, and internet addiction. Particular attention is given to the integration of AI-powered educational technologies for early identification of behavioral risks, continuous monitoring of students' learning activities, and personalized pedagogical support. The study further explores how SEL competencies—such as self-awareness, self-regulation, empathy, responsible decision-making, and relationship skills—contribute to reducing behavioral problems and fostering positive school climates. Based on a comprehensive review of contemporary literature and pedagogical approaches, the paper proposes an integrated framework combining AI-driven analytics with SEL-based interventions to enhance preventive practices in schools. The findings suggest that the effective integration of artificial intelligence, social-emotional learning, and collaborative efforts among teachers, parents, and school psychologists can significantly reduce the incidence of antisocial behavior while promoting students' well-being, digital citizenship, and positive social development. The proposed framework provides practical recommendations for educational policymakers and practitioners seeking to establish safer, more inclusive, and learner-centered digital learning environments.
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The rapid digital transformation of education has fundamentally changed the ways students learn, communicate, and interact within and beyond the classroom. The widespread adoption of digital learning platforms, artificial intelligence (AI), social media, and online communication technologies has created unprecedented opportunities for personalized learning, academic engagement, and educational innovation. At the same time, these developments have introduced new challenges related to students' psychological well-being, social adaptation, and behavioral development. Among these challenges, the increasing prevalence of antisocial behavior—including aggression, cyberbullying, social exclusion, disruptive conduct, and problematic internet use—has become a significant concern for educators, psychologists, and policymakers worldwide.

Recent international studies indicate that the digital environment may simultaneously function as a source of educational opportunities and behavioral risks. Although online technologies facilitate access to knowledge and collaborative learning, excessive or uncontrolled digital engagement may contribute to emotional instability, reduced empathy, weakened interpersonal relationships, and increased exposure to harmful online content. Consequently, schools are expected not only to promote academic achievement but also to create safe, inclusive, and psychologically supportive learning environments that foster students' social and emotional development.

Artificial intelligence has emerged as one of the most influential technologies in contemporary education. AI-powered educational systems provide opportunities for adaptive learning, learning analytics, early identification of students at risk, and personalized educational support. Through the analysis of students' behavioral patterns, learning engagement, and communication activities, AI technologies can assist educators in identifying early indicators of antisocial behavior and implementing timely preventive interventions. However, AI should not be viewed as a substitute for teachers or school psychologists; rather, it should serve as a decision-support tool that enhances pedagogical practices while respecting ethical principles, data privacy, and students' rights.

In parallel with technological advancements, Social-Emotional Learning (SEL) has gained international recognition as an evidence-based educational approach that promotes students' emotional intelligence, empathy, self-regulation, responsible decision-making, relationship skills, and social awareness. Research consistently demonstrates that students with well-developed social-emotional competencies are less likely to engage in aggressive or antisocial behaviors and are more capable of building positive interpersonal relationships and maintaining psychological well-being. Therefore, integrating SEL into school curricula represents an effective preventive strategy for addressing behavioral challenges in both traditional and digital educational settings.

Although numerous studies have investigated artificial intelligence in education and the effectiveness of social-emotional learning separately, limited attention has been paid to their combined application in preventing antisocial behavior among school students. Existing research primarily focuses either on technological innovations for learning improvement or on psychological interventions for behavioral development, leaving a gap regarding integrated pedagogical frameworks that combine AI-supported educational analytics with SEL-based preventive practices.

This study seeks to address this gap by examining how artificial intelligence and social-emotional learning can function as complementary pedagogical tools for preventing antisocial behavior in schools. The study develops an integrated conceptual framework that combines AI-based behavioral monitoring, social-emotional competence development, digital citizenship education, cyberbullying prevention, and collaborative partnerships among teachers, parents, and school psychologists. Such an approach aims to strengthen preventive education while supporting students' academic success, emotional well-being, responsible digital behavior, and positive social development.

The findings of this study are expected to contribute to the growing body of knowledge on educational technology and preventive pedagogy by providing theoretical insights and practical recommendations for researchers, educational institutions, and policymakers seeking to develop safer, more inclusive, and learner-centered digital learning environments.

The prevention of antisocial behavior among school students has become an increasingly important research area in educational sciences due to the rapid expansion of digital technologies and artificial intelligence (AI) in contemporary education. Recent studies indicate that while digital learning environments enhance access to educational resources and promote collaborative learning, they also create new behavioral challenges, including cyberbullying, digital aggression, social isolation, excessive internet use, and other forms of antisocial behavior. Consequently, researchers emphasize the need for innovative pedagogical approaches that combine technological solutions with students' social and emotional development.

The concept of antisocial behavior has been extensively discussed in psychology, sociology, and educational sciences. It generally refers to behaviors that violate accepted social norms, moral values, and the rights of others. These behaviors may include aggression, bullying, rule-breaking, vandalism, deception, and disruptive conduct. Social Learning Theory (Bandura, 1977; 1986) explains that children acquire behavioral patterns by observing and imitating significant others, including peers, adults, and increasingly, digital media. In digital environments, repeated exposure to violent or aggressive online content may reinforce undesirable behavioral patterns if preventive educational interventions are absent.

Bronfenbrenner's Ecological Systems Theory (1979) provides another important perspective by explaining that students' behavior develops through interactions among multiple environments, including family, school, peer groups, community, and digital media. This ecological perspective suggests that antisocial behavior cannot be explained solely by individual characteristics but must also be understood within the broader educational and social context. Therefore, effective prevention requires coordinated collaboration among teachers, parents, school psychologists, and local communities.

During the past decade, Social-Emotional Learning (SEL) has become one of the most widely recognized evidence-based approaches for improving students' behavioral and emotional outcomes. According to the Collaborative for Academic, Social, and Emotional Learning (CASEL), SEL develops five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Numerous empirical studies demonstrate that students with stronger SEL competencies show lower levels of aggression, bullying, disciplinary problems, and emotional distress while demonstrating greater empathy, academic engagement, and psychological well-being.

Digital citizenship and media literacy have also emerged as significant protective factors against antisocial behavior. Ribble (2015) argues that responsible digital citizenship requires students to understand ethical online behavior, digital communication, information evaluation, cybersecurity, and respect for others in virtual environments. Similarly, UNESCO and OECD reports emphasize that digital competence should include not only technological skills but also critical thinking, ethical responsibility, and online safety. Schools are therefore encouraged to integrate digital citizenship education into their curricula to reduce cyberbullying and other online behavioral risks.

Artificial intelligence represents one of the newest directions in preventive education. Recent educational studies indicate that AI-supported learning analytics can identify patterns associated with absenteeism, declining academic engagement, emotional difficulties, and behavioral risks. Machine learning algorithms are increasingly capable of detecting early warning signs through students' academic performance, learning management system interactions, and communication behaviors. Such systems enable educators to provide personalized support before behavioral problems become more severe.

However, researchers also emphasize that AI should complement rather than replace human pedagogical judgment. Ethical concerns regarding algorithmic bias, student privacy, data protection, transparency, and responsible AI

implementation remain central issues in educational research. Consequently, international organizations advocate a human-centered approach in which AI functions as an intelligent decision-support system while teachers maintain responsibility for educational decision-making.

Despite substantial research on AI in education and SEL separately, relatively few studies have explored their combined application as an integrated preventive framework for addressing antisocial behavior in schools. Existing literature often focuses either on technological innovations or psychological interventions without considering how these approaches can reinforce one another. This study addresses that gap by proposing a pedagogical model integrating artificial intelligence, social-emotional learning, digital citizenship, and collaborative school-family partnerships to establish comprehensive preventive strategies.

This study employed a qualitative research design supported by descriptive and analytical methods. The methodological framework was based on a systemic approach, social constructivism, ecological systems theory, competency-based education, and preventive pedagogy. These complementary perspectives enabled a comprehensive analysis of the relationship between artificial intelligence, social-emotional learning, and antisocial behavior prevention.

The research was conducted in several sequential stages. First, an extensive review of international scientific literature published in peer-reviewed journals, books, UNESCO reports, OECD publications, and CASEL frameworks was undertaken to identify current theoretical and practical approaches to antisocial behavior prevention. Particular attention was devoted to studies addressing AI applications in education, cyberbullying prevention, digital citizenship, behavioral intervention, and SEL implementation.

Second, a comparative analysis of contemporary pedagogical models was carried out to identify effective preventive mechanisms used in different educational systems. International experiences concerning AI-supported behavioral monitoring, school-based SEL programs, and digital safety education were systematically examined and synthesized.

Third, conceptual analysis was employed to clarify the relationships among the key constructs of the study, including artificial intelligence, social-emotional learning, digital citizenship, cyberbullying prevention, and antisocial behavior. Based on these analyses, an integrated pedagogical framework was developed.

The proposed framework consists of five interconnected components:

Early identification: AI-supported learning analytics and behavioral monitoring for detecting students at risk.

Social-emotional development: systematic implementation of SEL competencies within classroom instruction.

Digital citizenship education: promotion of responsible, ethical, and safe online behavior.

Collaborative intervention: active cooperation among teachers, parents, school psychologists, and school administrators.

Continuous evaluation: ongoing monitoring and assessment of students' behavioral and emotional development.

The study also adopted ethical principles recommended for educational AI research. These include respect for students' privacy, informed consent, transparency in AI-supported decision-making, fairness in algorithmic applications, and protection of children's rights. Artificial intelligence was conceptualized as an assistive pedagogical technology designed to support educators rather than replace professional educational judgment.

The methodological framework developed in this study provides a foundation for future empirical investigations and offers practical guidance for integrating artificial intelligence and social-emotional learning into comprehensive school-based prevention programs aimed at reducing antisocial behavior and promoting students' well-being in digital learning environments.

The findings of this study demonstrate that the integration of Artificial Intelligence (AI) and Social-Emotional Learning (SEL) provides a comprehensive pedagogical framework for preventing antisocial behavior among school students in digital learning environments. Contemporary educational systems increasingly recognize that behavioral problems cannot be addressed solely through disciplinary measures. Instead, preventive strategies should combine technological innovation, emotional development, and collaborative educational practices to establish safe and supportive school environments.

The literature analysis revealed that antisocial behavior among students is influenced by multiple interrelated factors, including individual psychological characteristics, family relationships, peer influence, school climate, and digital media exposure. The rapid expansion of social networking platforms, online gaming, and digital communication has increased students' exposure to cyberbullying, aggressive online interactions, misinformation, and harmful digital content. These findings are consistent with previous international research indicating that digital environments may simultaneously enhance learning opportunities while increasing behavioral risks when appropriate educational guidance is lacking.

One of the principal findings of this study is that AI-based educational technologies significantly improve the early identification of students who may be at risk of developing antisocial behavior. Learning analytics, intelligent tutoring systems, and behavioral monitoring platforms enable teachers to identify changes in academic participation, attendance patterns, learning engagement, and communication behaviors before serious behavioral problems emerge. Such predictive capabilities allow schools to implement timely pedagogical interventions rather than relying exclusively on reactive disciplinary approaches.

However, the analysis also indicates that artificial intelligence alone cannot effectively prevent antisocial behavior. Educational technologies should function as supportive instruments assisting teachers, school psychologists, and administrators in decision-making processes. Human professional judgment remains essential for interpreting behavioral indicators, understanding students' social contexts, and implementing individualized educational support. Therefore, successful prevention depends upon maintaining an appropriate balance between technological innovation and human-centered pedagogy.

Another significant finding concerns the role of Social-Emotional Learning in strengthening students' protective competencies. The reviewed evidence consistently demonstrates that SEL programs contribute to substantial improvements in students' self-awareness, emotional regulation, empathy, responsible decision-making, relationship skills, and conflict resolution. These competencies reduce aggressive behavior, improve peer relationships, and enhance students' psychological well-being. Schools implementing systematic SEL programs report fewer disciplinary incidents, reduced bullying, increased academic engagement, and more positive classroom climates.

The integration of AI and SEL creates opportunities for personalized preventive education. Artificial intelligence can identify students requiring additional emotional or behavioral support, while SEL provides evidence-based instructional strategies for developing protective social and emotional competencies. Rather than replacing traditional educational practices, AI enhances teachers' capacity to deliver individualized interventions that correspond to students' developmental needs.

The study also highlights the importance of digital citizenship education as an essential component of antisocial behavior prevention. Students who receive systematic instruction in ethical online communication, digital responsibility, cybersecurity, information literacy, and respectful virtual interaction demonstrate greater awareness of the consequences of cyberbullying and other harmful online behaviors. Consequently, digital citizenship education should become an integral component of school curricula alongside academic subjects.

Another important outcome concerns collaborative partnerships among schools, families, and mental health professionals. The findings indicate that preventive interventions become considerably more effective when teachers, parents, school psychologists, and administrators work collaboratively. Parents play a critical role in supervising children's digital activities, reinforcing positive behavioral expectations, and supporting emotional development beyond the classroom. Regular communication between schools and families strengthens the consistency of preventive educational practices.

Based on the synthesis of theoretical evidence, this study proposes an integrated pedagogical model consisting of five interrelated components: (1) AI-supported early behavioral risk detection; (2) systematic implementation of Social-Emotional Learning; (3) digital citizenship and media literacy education; (4) multidisciplinary collaboration among educators, families, and school psychologists; and (5) continuous monitoring and evaluation of students' behavioral development. The interaction among these components establishes a proactive rather than reactive approach to preventing antisocial behavior.

Despite the considerable potential of artificial intelligence, several challenges remain. Ethical issues related to data privacy, algorithmic transparency, fairness, and responsible AI governance require careful consideration. Schools must ensure that AI-supported monitoring systems comply with legal and ethical standards while protecting students' dignity and personal information. Furthermore, successful implementation requires continuous professional development for teachers so that they can effectively interpret AI-generated information and integrate it into pedagogical decision-making.

Overall, the results suggest that the combined application of Artificial Intelligence and Social-Emotional Learning represents a promising direction for contemporary preventive pedagogy. Their integration supports early intervention, strengthens students' emotional resilience, promotes positive digital citizenship, reduces antisocial behavior, and contributes to the development of safe, inclusive, and learner-centered educational environments. These findings provide both theoretical contributions and practical guidance for educators, researchers, and policymakers seeking to modernize behavioral prevention strategies within digitally transformed school systems.

This study demonstrates that the prevention of antisocial behavior among school students requires an integrated pedagogical approach that combines the educational potential of Artificial Intelligence (AI) with the developmental principles of Social-Emotional Learning (SEL). As digital technologies continue to transform educational systems worldwide, schools face the dual responsibility of promoting academic achievement while ensuring students' social, emotional, and psychological well-being. The findings indicate that AI and SEL are complementary rather than competing approaches, and their integration creates a more effective framework for preventing behavioral problems in contemporary schools.

The study confirms that AI-powered educational technologies can significantly improve the early identification of behavioral risks through learning analytics, behavioral monitoring, and personalized educational support. When implemented ethically and responsibly, AI enables educators to recognize early indicators of aggression, cyberbullying, social isolation, and other forms of antisocial behavior before these problems become more severe. However, artificial intelligence should function as a decision-support tool rather than a replacement for teachers or school psychologists. Human expertise, empathy, and professional judgment remain essential in interpreting behavioral data and implementing appropriate educational interventions.

The findings further emphasize that Social-Emotional Learning is one of the most effective preventive strategies for reducing antisocial behavior in schools. The systematic development of students' self-awareness, emotional regulation, empathy, responsible decision-making, and relationship skills strengthens protective factors that contribute to positive behavior, emotional resilience, and healthy interpersonal relationships. Integrating SEL into everyday teaching practices not only reduces disciplinary problems but also enhances academic engagement, classroom climate, and students' overall well-being.

Another important conclusion is that successful prevention depends on collaborative partnerships among schools, families, teachers, school psychologists, and local communities. Preventive programs become more sustainable and

effective when educational institutions actively involve parents in promoting responsible digital behavior, emotional development, and positive communication. Likewise, digital citizenship education and media literacy should be incorporated into school curricula to help students navigate digital environments safely, ethically, and responsibly.

Based on the findings, this study proposes an integrated pedagogical framework consisting of AI-supported early behavioral detection, Social-Emotional Learning, digital citizenship education, multidisciplinary collaboration, and continuous monitoring and evaluation. This model provides schools with a proactive approach that emphasizes prevention rather than reaction, allowing educators to address behavioral risks before they escalate into serious disciplinary problems.

The study also identifies several implications for educational policy and practice. Educational institutions should invest in AI-supported educational technologies, expand teacher professional development in digital pedagogy and SEL, strengthen school-family partnerships, and establish ethical guidelines governing the educational use of artificial intelligence. Such measures will contribute to creating safe, inclusive, learner-centered, and psychologically supportive school environments.

Future research should focus on empirical validation of the proposed framework through experimental and longitudinal studies conducted across different educational contexts. Additional investigations may also examine the effectiveness of specific AI applications, cross-cultural differences in SEL implementation, and the long-term impact of integrated preventive interventions on students' behavioral and academic outcomes.

In conclusion, the integration of Artificial Intelligence and Social-Emotional Learning represents a promising direction for modern preventive pedagogy. By combining technological innovation with human-centered educational values, schools can effectively reduce antisocial behavior, promote students' emotional well-being, foster responsible digital citizenship, and prepare young people for successful participation in an increasingly digital society.

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