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Managing Intense Behavioral Outbursts in Schools: Innovative Digital Interventions for Student Self-Regulation and Teacher Support

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Abstract

Behavioral outbursts and emotional dysregulation have been the main problems in the field of education, specifically in the area of inclusive education, which has been the greatest concern for students with EBD (Emotional Behavior Disorder) and neurodevelopmental disorders. The traditional ways of handling such behaviors, for example, punishing through detention, suspension, or removal, have only led to the escalation of the issue, thus increasing the rate at which the students are excluded and become less engaged with academics. Conversely, the effectiveness of the interventions with the use of technology has given a new way to the behavioral support team on how to transition from the reactive and skills-based to the proactive mode. This article highlights the current empirical and theoretical research findings (2018-2025) on the role of digital tools in the promotion of self-regulation, empathy, and professional efficacy, among other things. Such tools include biofeedback wearables, AI-driven emotional analytics, virtual and augmented reality (VR/AR) simulations, and teacher digital coaching systems. Based on the research and intervention models of PBIS, SEL, and UDL presented in this paper, the use of these resources is a catalyst for the transformations in school culture that are necessary for emotional inclusion and psychological safety. The narrative literature review has been used as the methodology which has been done by integrating research findings from more than seventy peer-reviewed journal articles from the fields of education, psychology, and human–computer interaction. The conclusion is that through the use of a multimodal digital system, the incidences of bad behavior can be reduced to a great extent, self-awareness can be improved and teacher burnout can be lessened but only when the implementation is done ethically and with the provision of support by training. The article ends with the implications for the policy, design, and sustainable professional development which, among other things, speak about the equilibrium between technological advancement and human empathy that has to be maintained in the education ecosystems.

Keywords: Self-Regulation; Behavioral Outbursts; Inclusive Education; Assistive Technology; Biofeedback; Virtual Reality; Emotional Learning; Teacher Well-Being

1. Introduction

1.1. Understanding Behavioral Outbursts: From Pathology to Pedagogy

Extreme behavioral outbursts—such as verbal aggression, defiance, and self-injurious or disruptive behaviors—continue to be a major challenge in schools nowadays (Osher et al., 2020; Reinke et al., 2023). In the past, the school's reaction to these episodes was mainly based on deficit-oriented models that saw such behavior as a maladaptive pathological aspect of the child's nature rather than the child's way of communicating (Sugai & Horner, 2020; Bear et al., 2022). Suspensions, restraints, and seclusions that aimed at regaining control were among the exclusionary methods used, but they familiarized emotional dysregulation and, in general, the vulnerable students got more and more

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marginalized, which especially applied to those with autism spectrum disorder (ASD), ADHD, or trauma histories (McMahon et al., 2021; Bešić et al., 2024).

Behavior is nowadays understood as educable and changeable through co-regulation and the acquisition of skills rather than simply being subdued by a punitive measure (Durlak et al., 2011; Cook et al., 2018). The change mirrors the integration between *Positive Behavioral Interventions and Supports (PBIS)* and *Social and Emotional Learning (SEL)*concepts which both, in fact, rely on the same pillars—empathy, self-awareness, and resilience—seen, in this case, as the basis of academic and social success (CASEL, 2023; Freeman et al., 2021).

The modern inclusive system acknowledges that behavioral problems can be the façade of the ones behind the lack of emotional literacy, executive functioning, and being overly influenced by environmental factors (Florian & Beaton, 2018; Zembylas, 2021). Consequently, the use of punishments is limited with a significant turn toward methods which through instruction provide students with the skills necessary for identifying, managing, and expressing their feelings in a positive way (McIntosh et al., 2021; Pagliara et al., 2024).

1.2. Digital Transformation of Behavioral Support

The rise of EdTech has significantly changed the way behavior issues are treated in the educational environment. The use of digital tools is accompanied with the integration of AI-driven analytics, biofeedback, immersive learning environments, and mobile self-regulation platforms to facilitate behavioral management on a preventive level (Villani et al., 2021; Gao et al., 2023).

For instance, wearable gadgets like the Empatica E4 and Muse headbands monitor various physiological parameters such as heart-rate variability, skin conductance, and temperature. This, in turn, allows for the detection of stress escalation in its very early stages (Schneider et al., 2022). Information obtained from these parameters is then sent to the machine-learning-powered dashboards that provide notification to teachers and suggest strategies aimed at calming the situation thus preventing disruptive behavior from taking place (Reinke et al., 2023). These types of intervention are in line with PBIS Tier 1 and 2 supports and focus on prevention through immediate awareness rather than correction after the fact (Sugai et al., 2016).

At the same time, the use of immersive VR and AR technologies allows for environments removal of the real one in which students can practise and learn emotional regulation. In several controlled environments, the use of virtual calming rooms and mindfulness-based VR activities have been proven to bring down physiological arousal and the number of times aggressiveness occurs in youth with behavioral disorders (Lau et al., 2022; Baragash et al., 2024). On the other hand, gamified mobile apps such as Breathe2Relax, Mindful Powers, and MoodMission, through interactive cognitive-behavioral exercises, also help in the development of self-regulation (Anderson & Farnsworth, 2023; McMahon et al., 2021).

Moreover, if these are supported by teacher coaching systems—online platforms offering directions and feedback on managing the classroom—the implementation, they will not only strengthen the teachers' skills but also increase the chances of their calm reaction, better understanding of the antecedents, and co-regulation with students (Hargreaves & Fullan, 2020; Kim et al., 2024). A series of studies show that combined use of technologies and the related pedagogical practices can lead up to 40% fewer occurrences of crises in the classroom as well as the improvement in the quality of learning environment (Duarte & Carvalho, 2023; Urbani, 2024).

Last but not least, we emphasize the significance of all digital technologies in the field of education and in Behavioral training, which is very effective and productive and facilitates and improves the assessment, the intervention, and the educational procedures via mobile devices that bring educational activities anywhere [58-59], various ICTs applications that are the main supporters of education [60-67], and AI, STEM, Games and ROBOTICS that raise educational procedures to new performance levers [68-73]. Additionally, the improvement and blending of ICTs with theories and models of metacognition, mindfulness, meditation, and emotional intelligence cultivation [74-88], accelerates and improves more than educational practices and results, especially in behavioral conditioning and training, treating domain and its practices like assessment and intervention.

1.3. Integrating PBIS, SEL, and UDL: A Unified Framework

Theories that underlie technology-mediated behavioral interventions can be traced to three major frameworks that are closely related:

- PBIS offers a prevention architecture at the level of systems through which is stressed an emphasis on consistent expectations, reinforcement, and data-informed decision-making (Sugai & Horner, 2020; Freeman et al., 2021).
- SEL decorates behavioral support with emotional literacy, empathy, and perspective-taking, thereby developing intrinsic motivation for self-regulation (CASEL, 2023; Jones et al., 2021).
- UDL advocates accessibility and the attribute of being able to change one's mind, thus allowing a diverse group of learners, e.g. those with sensory or emotional regulation challenges, to be engaged in a meaningful way (CAST, 2018; Edyburn, 2020).

Together these paradigms frame technology as a mediator of inclusion- thus allowing the emotional profiles of individuals to be responded to by adaptive scaffolds while still maintaining the community belonging (Florian & Beaton, 2018; Drigas & Mitsea, 2022). The digital co-regulation concept which stands as a pedagogical process where technology helps to facilitate the empathic connection and emotional awareness rather than be a tool of surveillance or control is supported by this congruence (Pagliara et al., 2024; Zembylas, 2021).

1.4. Research Aims, Questions, and Hypotheses

This article renews to study how innovative digital tools may change the handling of severe behavioral exploded as one of the childrens educations, through which to learn empathy and self-control.

Aims:

- To integrate up to date (2018–2025) studies concerning the implementation of technologized psychological interventions for emotional and behavioral control.
- To investigate the interrelation of PBIS, SEL, and UDL concepts within electronic networks facilitating inclusive behavior management.
- To discover the community of ethical and pedagogical problems that raise due to the implementation and teacher accompaniment.

Research Questions:

- How do biofeedback, VR/AR, and AI-driven interventions impact on self-control and lessen the occurrence of crises in students with behavioral difficulties?
- What effect do teacher preparedness and digital literacy have on the implementation of tech-based behavioral interventions?
- Which ethical precautions and inclusive design features that prevent stigmatization or inaccurate use are necessary?

Hypotheses:

- H_1: Technology-enhanced interventions diminish behavioral outbursts and promote emotional self-awareness over traditional disciplinary practices.
- H_2: Teachers professional development is a key factor that determines the effectiveness and duration of these digital interventions.
- H_3: When ethically regulated, digitally co-created environments can lead to increased student agency, empathy, and inclusion.

1.5. Structure of the Paper

Chapter 2 describes the narrative literature review methodology. The third chapter integrates the research findings of the empirical studies on self-regulation and teacher support. The fourth chapter provides a critical discussion and refines the ideas of inclusive education that have figured in the previous chapters. The fifth chapter ends the book with policy suggestions, limitations, and new research avenues.

2. Methodology

The study of technology-enhanced interventions for managing intense behavioral outbursts requires a The authors adopt a methodological framework that is systematically organized yet maintains flexibility. While Chapter 1 provided a conceptual framework demonstrating among other things the complex interaction between emotional dysregulation, pedagogical mediation, and digital tools, Chapter 2 is concerned with the way contemporary research in these fields was located, assessed, and integrated. The rapid change of the new technological devices and applications is from one side a great challenge for the researchers and on the other hand a good reason for providing the research with a methodological framework that can cope with the various aspects of the interventions in question.

The present review is not limited to just one traditional approach through which challenging behavior is looked at as something happening in isolation or psychometric indicators are relied on. Instead, it takes a wider view wherein the technological affordances are directly connected to the pedagogical principles of inclusion, co-interpretation, and emotional empowerment. As such the selection of a narrative literature review goes beyond being just another methodological choice but it is indispensable for it to be able to incorporate different study types, theoretical bases, and empirical results thus making it possible to gain a comprehensive view of the role of technology in behavioral crisis management in the educational environment.

The introductory part of this chapter is also emphasizing the necessity of critical examination of the methods used, especially in light of the ethical issues, controversies related to data-protection, and unequal access to digital interventions that are raised by this study. In a scenario where technology becomes a major factor in the students' emotional experiences, the research process ought to be in line with scientific rigor, pedagogical accountability, and social awareness.

Framed in this way, the second chapter of the book reveals the study's methodological core: it is a review-type study and its data-sources, search-strategy, inclusion and exclusion criteria, analytical procedures, and steps taken to ensure validity and ethical conduct. The aim is to create a logical research path that will make it possible for the succeeding chapters to show and interpret the international results not only in a profound and credible way but also with great accuracy.

2.1. Research Design and Rationale

The study presented here utilizes a narrative literature review method to first digest and then critically analyze research regarding digital interventions for the control of behavioral outbursts and emotional dysregulation in school contexts. Utilizing a narrative approach enables this research to incorporate diverse and disparate types of evidence from psychology, pedagogy, and technology-enhanced learning, which are three areas that are generally very separate in terms of disciplines (Greenhalgh et al., 2018; Baumeister & Leary, 1997). This design helps to achieve a multidimensional understanding of both the technological affordances and the socio-emotional processes that are the basis of behavioral regulation.

Systematic reviews, on the one hand, emphasize methodological accuracy; however, they usually constrain the range by not allowing the inclusion of theoretical and newly published empirical works. On the other hand, narrative synthesis can handlemixed sources such as experimental controlled trials, qualitative-focused case studies, and conceptual and policy-oriented works, without any restriction in the number or type of sources, thereby enabling an extensive and detailed investigation of tertiary sector and practice (Grant & Booth, 2009; Snyder, 2019). In particular, this method is suitable for the case of technology-mediated interventions where fast innovation and the situational nature of the interventions make any meta-analysis premature (Holmes et al., 2021; Villani et al., 2021).

The core concepts – Positive Behavioral Intervention and Supports (PBIS), Social and Emotional Learning (SEL), and Universal Design for Learning (UDL) – not only helped to define the inclusion criteria but were also used as a lens for interpreting the data. Each of these frameworks identifies behavioral regulation as the core element within fair, accessible and human development systems (Sugai & Horner, 2020; CASEL, 2023; CAST, 2018).

2.2. Data Sources and Search Strategy

The review systematically examined peer-reviewed articles, conference proceedings, and high-quality institutional reports published between 2018 and 2025. Searches were conducted in multidisciplinary databases including Scopus, Web of Science, PsycINFO, ERIC, and ScienceDirect, and were further supplemented by open-access repositories such as MDPI, Frontiers, and Springer Open. Keyword combinations encompassed terms related to behavioral outbursts, self-regulation, emotional dysregulation, special and inclusive education, PBIS, SEL, digital intervention, AI analytics,

biofeedback, virtual reality, teacher support, classroom management, assistive technology, and universal design. Boolean connectors such as "AND," "OR," and "NOT" were employed to refine search results—for example, in queries like "self-regulation AND digital intervention AND special education." Additionally, reference lists from seminal studies were manually reviewed to identify further relevant sources through Snowball sampling (Booth et al., 2016). In total, 1,242 records were initially retrieved; after abstract screening and duplicate removal, 156 studies met the inclusion criteria. A subsequent full-text assessment for relevance and methodological rigor resulted in 72 key publications being retained for analysis, representing empirical studies, meta-analyses, theoretical frameworks, and policy documents.

2.3. Inclusion and Exclusion Criteria

2.3.1. Inclusion criteria

Among the inclusion criteria, studies should have been published within 2018–2025 and be in a language of English. They must have covered innovations in regulating behavior in school children, directly or indirectly, through intervention in the emotional regulation of the kids or related constructs such as stress, frustration tolerance, and impulsivity. Studies had to investigate or use digital or technological aspects like biofeedback, AI, VR/AR, mobile SEL platforms, or teacher digital coaching tools. They also needed to deliver quantitative or qualitative outcomes related to behavioral frequency, self-regulation, empathy, or teacher effectiveness and be supported by inclusive, psychological, or pedagogical frameworks such as PBIS, SEL, UDL, or trauma-informed education.

2.3.2. Exclusion criteria

Exclusion criteria ruled out research works only looking at clinical or therapeutic settings outside of schools (for example, psychiatric care). They excluded non-empirical works like editorials and commentaries, and the interventions without a behavioral or educational focus, such as general cognitive training. Moreover, non-peer-reviewed pieces without methodological transparency were among the exclusions.

2.4. Analytical Framework

The data was analyzed using thematic synthesis model which incorporated both inductive and deductive reasoning (Braun & Clarke, 2006; Thomas & Harden, 2008). The deductive layer was derived from PBIS, SEL, and UDL principles, whereas the inductive coding disclosed the themes relating to digital mediation, teacher emotional labor, and ethical challenges.

Four main analytical dimensions served the synthesis:

- Technological Efficacy and Behavioral Outcomes
- Impact of digital tools (AI, biofeedback, VR/AR, gamified SEL) on frequency, intensity, and recovery from outbursts.
- Quantitative indicators: incident reduction rates, physiological stress markers, and student engagement metrics (Bear et al., 2022; Lau et al., 2022; Reinke et al., 2023).
- Emotional and Cognitive Mechanisms
- Research on how technology helps to develop self-awareness, emotional labeling, and executive functioning (Villani et al., 2021; Gao et al., 2023).
- Connection between digital reflection tools and SEL skills like empathy and responsible decision-making (Jones et al., 2021; CASEL, 2023).
- Teacher Mediation and Professional Capacity
- Analysis of factors such as teacher digital literacy, perceived efficacy, and burnout reduction while using AI dashboards or VR-based co-regulation simulations (Ertmer & Ottenbreit-Leftwich, 2010; Kim et al., 2024; Hargreaves & Fullan, 2020).
- Evaluation of school-level supports—training hours, mentorship, collaborative communities—and their moderation effects on outcomes (Duarte & Carvalho, 2023; OECD, 2023).
- Ethical, Cultural, and Accessibility Considerations
- Examination of issues such as privacy, algorithmic bias, and access to that (Holmes et al., 2021; Williamson & Piattoeva, 2022).
- How UDL and ethics-by-design frameworks contribute to inclusiveness and cultural responsiveness (Pagliara et al., 2024; Urbani, 2024).

Altogether, these classifications provided a multilayered understanding of the intersection of technology with pedagogical, emotional, and ethical systems to not only manage but also to use the behavioral outbursts in a constructive way.

2.5. Data Synthesis Process

The synthesis procedure was three-fold:

- Data Extraction: Essential information—study context, participants, technological modality, and outcomes—was freshly and systematically documented.
- Coding and Theme Development: Two independent researchers undertook coding of data with the help of NVivo software. From the outset, the codes were merged into more general themes that reflected the behavioral, emotional, and institutional aspects. The level of agreement between the coders (Cohen's $\kappa = 0.87$) was very high.
- Integration and Narrative Construction: Thematic findings were understood in light of PBIS, SEL, and UDL frameworks to generate an integrative narrative that link quantitative trends with qualitative insights.

Meta-inferences pointed out that the effectiveness of digital behavioral interventions is less dependent on the technical complexity and more on teacher mediation, ethical alignment, and contextual adaptation(Selwyn, 2022; Drigas & Mitsea, 2022).

2.6. Validity, Reliability, and Ethical Rigor

To limit bias, the validation strategies used were triangulation of quantitative and qualitative data sources, member-checking by feedback from educators and psychologists knowledgeable about digital behavioral interventions, peer debriefing to confirm the consistency of the interpretation and the thematic saturation and also the openness in the selection criteria and the analytic decisions in accordance with the PRISMA narrative reporting recommendations.

3. Results

The synthesis of seventy-two peer-reviewed studies, enriched by broader interdisciplinary evidence drawn from learning sciences, cognitive psychology, neuroeducation, and digital ethics, reveals strong and consistent patterns regarding the impact of technology-mediated interventions on behavioral regulation in school settings. Across the reviewed literature, digital solutions—ranging from AI-enhanced analytics and biofeedback systems to immersive VR/AR learning environments and teacher-support platforms—emerge as catalysts for measurable behavioral improvements, deepened emotional and cognitive skills, and strengthened teacher professional capacity. These outcomes are particularly robust when aligned with inclusive pedagogical models such as PBIS, SEL, and UDL, which situate technology not as a substitute for relational teaching but as a tool that amplifies co-regulation, empathy, and data-informed professional judgment.

The results are organized into four interconnected thematic clusters: (a) measurable behavioral outcomes, (b) emotional and cognitive regulation, (c) teacher efficacy and emotional labor, and (d) systemic, cultural, and ethical conditions for sustainable implementation.

3.1. Behavioral Outcomes and Incident Reduction

A considerable amount of quantitative and mixed-methods research has shown that technology-enhanced behavioral supports have been instrumental in achieving a significant reduction in the frequency, intensity, and duration of behavioral outbursts in different educational settings. In the studies that incorporated AI-driven behavior dashboards within PBIS frameworks, it was found that there were consistent drops—most of the time between 30% and 60%—in the number of office disciplinary referrals, aggression incidents, and classroom disruptions (Reinke et al., 2023; McIntosh et al., 2021). The reductions in these negative behaviors were particularly evident in the inclusive classrooms that catered to students with emotional and behavioral disorders (EBD), ADHD, autism spectrum conditions, and traumatic backgrounds (Horner & Sugai, 2021; Goodman et al., 2020).

Several physiological monitoring tools (e.g., Empatica E4, Fitbit EDU, Affectiva sensors) were able to depict real-time stress situations through heart rate variability (HRV), skin conductance, and movement patterns. The data served as an excellent way to train students in the early identification of the disruption of regulation—a prerequisite for situation escalation prevention (Villani et al., 2021; Porges, 2011). In particular, machine learning systems yielded the best results

when they provided the likelihood of escalation at a certain time or place, thereby enabling educators to preempt situations (Wang et al., 2024; Park et al., 2023).

Several longitudinal experiments have come to the conclusion that students' training through biofeedback greatly increases their frustration tolerance, delay of gratification and compliance with classroom routines (Gao et al., 2023; Rybczynski & Hargreaves, 2022). Besides, these behavioral accomplishments are also linked with the students' better classroom climate experience, peer acceptance, and cooperative behaviors, thus technology may indirectly be a facilitator of prosocial development (Bear et al., 2022; Jagers et al., 2019).

Among the digital gamified interventions engaging children in daily self-regulation exercises were MoodMission, Smiling Mind, and Breathe-Think-Do. The basis of their triumph lies in the principle of Self-Determination Theory, which underscores autonomy, competence, and relatedness as inner motives for behavioral transformation (Ryan & Deci, 2020). Students were constantly stating that they felt more motivated and engaged if self-regulation tasks were presented as achievable challenges rather than corrective disciplinary steps.

Cumulatively, this body of evidence corroborates the first hypothesis (H_1): technology that is embedded within PBIS and SEL frameworks contributes to substantial reductions in behavioral incidents by turning reactive discipline into proactive, relational pedagogy.

3.2. Emotional and Cognitive Regulation

Digital tools are not just behaviorally improving on the surface; they significantly emotionally equip, cognitively mature, and develop the executive functioning of the students. VR and AR educational scenarios—like VR calm rooms, social simulation platforms, and AR interpersonal storytelling tools—provide completely safe, low-risk settings in which the users can learn and practice coping skills, perspective-taking, and conflict resolution (Lau et al., 2022; Kalyvioti & Mikropoulos, 2022). Meta-analytic results indicate that virtual reality-supported social and emotional learning interventions have a powerful effect on students' ability to recognize emotions, their inhibitory control, and empathy, in particular, neurodivergent students (Howard & Gutworth, 2020; Baragash et al., 2024).

Brain research is in line with the same directions. Studies on biofeedback and neurofeedback show that these activities lead to the strengthening of the prefrontal regulation circuits that are behind emotional monitoring, inhibitory control, and cognitive flexibility—thus, they play a central role in calming down mechanisms (Gabrieli, 2023; Arnold & De Los Reyes, 2022). Consistent engagement with digital self-regulation exercises brings about the improvement in task-switching skills as well as the decrease of the impulsivity that can be captured by Stroop and Go/No-Go tasks (Gao et al., 2023; Rao et al., 2014).

Online journaling tools (Reflectly, Daylio EDU) and AI-powered mood check-ins are very attractive for students and, at the same time, are useful instruments in the student's journey towards building emotional vocabulary and acquiring self-awareness. The platforms convert the internal states into visible and manageable ones, thus, emotional processes that had been invisible become visible and actionable (Drigas & Mitsea, 2022). Several pieces of research strongly plaque that students' interaction with emotional analytics tools on a regular basis result in their enhanced self-reflection, lesser occurrence of catastrophizing, and more proper ways of asking for help (Jones et al., 2021; Schonert-Reichl, 2019).

The evidence from these studies confirms the role of technology as an emotional and cognitive regulation developmental scaffold, which is consonant with the notion that emotional competence can grow faster when learners are given immediate, individualized feedback, something that is very challenging to be done in real-life episodes of dysregulation.

3.3. Teacher Efficacy, Emotional Labor, and Professional Empowerment

Teacher well-being and professional ability were the main factors that influenced the success of all digital measures. Across more than twenty publications, teachers utilizing AI dashboards, VR-based co-regulation simulations, and digital coaching tools shared that their self-efficacy was raised, emotional fatigue was lowered, and they felt more empowered to handle difficult behaviors (Hargreaves & Fullan, 2020; Kim et al., 2024; Freeman et al., 2021).

Educators repeatedly pointed out that real-time behavioral data enabled them to see student outbursts not as a challenge to authority but as the communication of unfulfilled needs, thereby resulting in a more empathetic and restorative way of dealing with the situation (Florian & Black-Hawkins, 2011; Ainscow, 2020). Besides, digital platforms

helped instructional flow by lessening the number of disruptions, thus, teacher stress and burnout, which are the main causes of professional attrition, were lowered (Carver-Thomas & Darling-Hammond, 2019; Dutro & Carter, 2023).

Professional development (PD) was identified as a key factor in guaranteeing the practice of sustainability and morality. The studies indicate that teachers who engaged in 10–20 hours of well-organized PD in the use of SEL-aligned digital tools showed improvement in classroom management, implementation fidelity, and confidence in interpreting biofeedback data (Ertmer & Ottenbreit-Leftwich, 2010; Duarte & Carvalho, 2023). The VR training modules depicting escalated situations were especially successful in improving the emotional resilience and de-escalation skills of the teachers (Dieker et al., 2021).

The evidence is also in favor of the idea of digital empathy spaces where technology helps to establish teacher-student relationships based on empathy by revealing more of the emotional processes (Drigas & Ioannidou, 2013). This relational grounding is the core: interventions carried out without teacher empathy or reflective practice rarely lead to lasting change.

3.4. Systemic, Cultural, and Ethical Dimensions

Even if the digital instruments have a considerable potential, their usage is influenced by limitations of the system, norms of the culture, and moral principles. Inequalities in the digital world still exist: recent analyses of OECD (2023) indict that the access to the advanced SEL technologies—such as the biofeedback systems, AI dashboards, and VR tools—differs significantly in various socio-economic conditions, while schools in low-income areas and those in remote locations are more likely to be lacking in resources (Saini et al., 2024).

Also, cultural misalignment was identified as an obstacle. The emotionally regulated learning (ERL) platforms created in the West normally were based on standard emotional scripts, which were not consistent with students' emotional and cultural backgrounds (Bešić et al., 2024; Kim & Zeng, 2022). Through the participatory co-design frameworks—students, families, and teachers being the participants—culture responsiveness was ensured, and misunderstanding was reduced (Holmes et al., 2019; Urbani, 2024).

Among the issues raised by far were the ethical concerns. Academics caution that emotional analytics, uninterrupted monitoring, and AI prediction models may facilitate the acceptance of surveillance, the revival of bias, and constriction of the "acceptable" behavioral norms (Williamson & Piattoeva, 2022; Selwyn, 2022). Pleased to note that conversant data governance measures, anonymization, consent protocols, and ethics-by-design frameworks played an indispensable role in trust building and prolonging the program life (Holmes et al., 2021; Kooli, 2025).

With respect to accessibility, the studies examined here point out that VR/AR scenarios that are not well adjusted may cause sensory overload, cybersickness, or anxiety in neurodiverse students. Features aligned with UDL—sensory settings that can be changed, multimodal instruction, and non-immersive options—were instrumental in providing safety and access on an equal basis (CAST, 2018; Edyburn, 2020; Howard & Gutworth, 2020).

In general, the results of the research are consistent with the third hypothesis (H_3): digitally interconnected environments that are morally regulated, culturally rooted, and attentive to the needs of the disabled lead to the development of empathy, equity, and the inclusive participation of the society members.

3.5. Integrated Synthesis

A cross-sectional examination of the studies considered shows that digital interventions can be very effective if they remain part of a relational ecosystem that is based on equity, empathy, and pedagogical intentionality. Three interdependent pillars determine the effectiveness:

3.5.1. Pedagogical alignment:

Use of digital tools should be a part of well-established frameworks like PBIS, SEL, and UDL. In the absence of such a foundation, the collection of data becomes something that is detached from emotional and behavioral learning that has taken place.

3.5.2. Teacher mediation:

The data which is given are not sufficient to bring about changes in behaviors. Teachers, therefore, should be considered as co-regulators who make the digital outputs more humane, demonstrate emotional literacy, and convert the insights into supportive relational practices.

3.5.3. Ethical and cultural integrity:

Ensuring that data is collected through transparent means, adapting it culturally, and putting in place accessibility measures are the ways through which digital supports can be human-centered and not a means for punishment or exclusion.

In case any one of these elements is missing, the digital tools may be deepening the differences of the already existing inequities or increasing the stress levels of both students and teachers. On the other hand, when they are there, technology is seen as a relational bridge that can extend the concept of empathy, make early intervention possible, and change the disciplinary systems into collaborative, inclusive, and future-oriented ecosystems of care.

4. Discussion

The findings of this research radically redefine behavior management in a modern inclusive class. The study shows that digital ecosystems can help calm down the situation when there is a behavioral crisis instead of punishing the disruption. Thus, this is a wonderful opportunity to teach students self-control, empathy, and even resilience. In this redefinition, technology is not considered an instrument of surveillance but rather an emotional support through which students and teachers can jointly discover emotional understanding (Drigas & Mitsea, 2022; Zembylas, 2021). The article below reflects on the results through the three intersecting models of PBIS, SEL, and UDL, which represent the pedagogical, psychological, and ethical dimensions.

4.1. Digital PBIS and the Transformation of School Discipline

The shift of Positive Behavioral Interventions and Supports (PBIS) to technology-enabled processes represents a pivotal move away from punishment-based control towards the development of students' skills. In traditional disciplinary frameworks, the collection of data was frequently done with a view to serve administrative or corrective functions (Sugai & Horner, 2020; Bear et al., 2022). Nevertheless, the new digital PBIS model treats data as a tool for educational dialogue: interfaces, wearable devices, and instant analytics display the behavioral patterns not only for educators but also for the students, thus helping them to jointly identify triggers and responses through reflection (Reinke et al., 2023; McIntosh et al., 2021). Such a constructive approach to data is a clear example of what Hargreaves and Fullan (2020) have termed professional capital—teachers' knowledgeable, morally sound, and collaborative engagement with evidence that leads to the creation of nurturing educational settings.

In this way, digital PBIS systems are not simply managerial instruments but vibrant co-regulation settings that facilitate mutual growth through the language of behavioral feedback (Villani et al., 2021). Research-backed evidence reveals that the digitalization of the PBIS leads to a notable reduction of behavioral incidents and a simultaneous rise in student engagement (Wang et al., 2024; Gao et al., 2023). These are the very outcomes that validate the constructivist principle which holds that long-term behavioral change is the result of understanding and involvement rather than mere compliance. Hence, the digital overhaul of PBIS not only changes the role of the teacher to that of a facilitator, which is in line with the principles of inclusive education and relational pedagogy (Florian & Black-Hawkins, 2011; Ainscow, 2020), but also corresponds to the educator's place in the learning community.

4.2. SEL and the Rise of Digital Empathy

Technology's integration with Social and Emotional Learning (SEL) highlights the emotionally engaging aspect of educational technology. The meta-analysis of these studies indicates that digitally-led SEL interventions—from gamified mobile applications to virtual reality empathy simulations—promote students' awareness of the self, emotional literacy, and prosocial behavior (Durlak et al., 2011; McMahon et al., 2021; Lau et al., 2022). These findings illuminate the effectiveness of such technologically enabled SEL curriculum in educational settings and suggest a promising direction for SEL implementation across diverse student populations.

VR "emotion labs" and AR storytelling are examples of immersive technologies through which learners can experience different perspectives, thereby increasing empathy and decreasing the likelihood of aggressive behavior (Baragash et al., 2024; Kim et al., 2024). Bailenson (2018) and Zembylas (2021) contend that these scenarios promote digital empathy: the cognitive and emotional connection that is achieved when technology facilitates an embodied understanding. In such a scenario, behavioral regulation transcends self-control—it becomes relational awareness.

The data also lend support to the idea that SEL skills, especially those of self-management and responsible decision-making, become stronger when students obtain quick and clear (often visual) feedback about their emotional states (CASEL, 2023). This is the feedback loop that biofeedback devices and app-based adaptive learning programmes

provide, thus one can witness a cycle of continual self-correction and the soothing of the emotional skills and understanding become more deeply internalized (Schneider et al., 2022; Rao et al., 2014). The outcome is the transition of external behavior modification into intrinsic motivation, which is in harmony with Deci and Ryan's (2000) self-determination theory as well as the latest research on intrinsic regulation (Gabrieli, 2023).

In addition, online SEL interventions have the potential to promote the feeling of being socially integrated which is vital in preventing the intensification of problematic behaviors. Tasks for online collaboration and shared virtual environments lead to the diminishment of social exclusion and the enhancement of peer empathy (Johnson & Johnson, 2009; Florian & Beaton, 2018). The assertions that 'technology can put into practice what is needed concerning care, thus transforming empathy from a mere theoretical vantage point into a measurable interaction skill' (Noddings, 2012) find support in this research.

4.3. UDL as the Accessibility Framework for Behavioral Inclusion

Reviewed evidence emphasizes that inclusive technology should offer multiple ways of engagement, representation, and expression (CAST, 2018; Edyburn, 2020). For instance, when students use colors, emojis, or virtual avatars to express their emotions instead of words, teachers receive more detailed insights into students' emotional states (Karagianni & Drigas, 2023a). From a UDL perspective, behavioral education thus becomes an expansion in communication diversity rather than merely rule compliance. By allowing different modes of expression, schools decrease the chances of neurodiverse students getting frustrated and thus prevent the escalation of their behaviors (Villani et al., 2021). Besides, this method is in line with the neurodiversity movement in education, which treats behavioral differences as different ways of interaction rather than deficits (Pagliara et al., 2024). The use of technological personalization, for example, adaptive feedback intensity, customizable avatars or sensory modulation, goes a step further in realizing the UDL principles thus making sure that the intervention respects the emotional threshold of each learner (Howard & Gutworth, 2020). Inclusion, in this sense, is an ecosystemic property: it is not about students being fitted to technology but about technology being designed in a way that it can adapt to students.

4.4. Teachers as Ethical Mediators of Digital Behavior Support

The concept of teacher agency appeared as main to the theme in the majority of the results presented. The use of digital tools to bring precision and scalability is commendable, however, the impact of the tools depends on the interpretive, ethical, and emotional competence of the educators (Ertmer & Ottenbreit-Leftwich, 2010; Kim et al., 2024).Therefore, teachers are the ones who convert the digital signs into human understanding and also help students achieve reflective self-regulation.

One of the most consistent research findings is that professional development based on ethics and empathy radically changes teachers' perception of behavior. They stop seeing defiance as an origin of the outburst and recognize them as an emotional need that is not satisfied (Drigas & Ioannidou, 2013; Florian & Beaton, 2018). This interpretative empathy not only decreases the amount of the conflict but also provides a model of emotional regulation for students, the process that is supported by mirror-neuron theory in social learning (Gabrieli, 2023).

Moreover, the emotional labor of teachers—the work that is going on inside the teacher and is aimed at maintaining the calm and care—gets better when technology is sharing the cognitive load with them. AI dashboards and digital SEL tools make the process of monitoring external, thus giving teachers a chance to engage with students on a relational level (Reinke et al., 2023; Duarte & Carvalho, 2023). Hargreaves and Fullan (2020) note that such expansion of the faculty's capabilities is professional capital, the raising of the level of teaching from reactive management to reflective artistry.

Nevertheless, this cooperation between human and machine cannot be successful without confidence and moral regulation. It is a prerequisite of teachers to maintain free control of their decisions, be sure that algorithmic recommendations are only guides and not orders (Williamson & Piattoeva, 2022; Urbani, 2024). So, the move to co-regulation should still be able to take into account technological efficiency, professional judgment, and emotional authenticity.

4.5. Ethical and Cultural Implications: Toward a Human-Centered Digital Pedagogy

Even though digital-intervention benefits are quite sizeable, the results also show that these benefit-issues include critical ethical and cultural problems, which need to be addressed carefully. Academics caution that without the implementation of ethics-by-design, digital behavior management may lead to the reproduction of surveillance cultures and algorithmic biases (Holmes et al., 2021; Kooli, 2025; Selwyn, 2022). The 'emotional' aspects of the data collected by wearable devices or AI analytics can be misunderstood, thus, the 'emotional' data subjects may become labeled or

treated unfairly (Williamson & Piattoeva, 2022). Therefore, the application of ethical frameworks based on transparency, consent, and co-ownership of data is the only way out. Developing systems with a participatory design approach, i.e., students, parents, and teachers defining together the system's parameters, is considered a safeguard for human dignity (Holmes et al., 2019; Duarte & Carvalho, 2023). Besides, this collaborative ethics model relates to the democratic principles of inclusive education, which, among others, point to the mutual responsibility and respect. Cultural awareness is also very important. For instance, the emotional and behavioral aspects of individuals' lives differ from one community to another; hence, technologies that were developed based on one culture may misunderstand the behaviors of another culture (Bešić et al., 2024). Therefore, an inclusive digital pedagogy ought to have the skill of contextual empathy, which is the ability to both design and interpret technology from varied cultural perspectives. As Urbani (2024) points out, ethical digital inclusion is a combination of technological literacy and intercultural sensitivity. To summarize, the existence of technology as a means for behavior support is contingent upon its consonance with humanistic ethics: autonomy, empathy, and justice. These virtues are the guarantors that digital innovations become human care's amplifiers, not substitutes.

4.6. Synthesis: From Control to Connection

The main message of this research is the change of the main focus from control of behavior to building a relationship. The use of digital systems as part of PBIS, SEL, and UDL frameworks not only changes discipline from a correction to co-learning process but also students learn management of their impulses and understanding of emotions—both their own and others'. Teachers, thus, are not enforcers but co-regulators, empathizing, being patient and calm, and reflecting. By this transformation, inclusion is redefined as a living relational practice, with technology being the connective tissue between cognition and emotion, between learners and educators. Integration of affective computing, neuroeducation, and ethical pedagogy ideas leads to the school becoming empathy-driven innovation laboratories (Villani et al., 2021; Pagliara et al., 2024). At the end of the day, digital interventions for behavior management are effective not because they record data but because they convert emotion into understanding. This integration is a step towards the bigger vision of inclusive education: a school culture where every behavioral challenge is also an opportunity for growth, relationship, and human connection.

5. Conclusions and Implications

5.1. Summary of Core Findings

The present article has examined the potential of digital technologies to revolutionize the manner in which behavioral outbursts are managed in education settings, mainly in special and inclusive education settings. A review of recent publications (2015-2025) reveals that there is a significant shift from the use of punitive measures and the reactive control to the proactive, skill-based intervention where behavior is not viewed as misbehavior but as teaching. Digital technologies are ubiquitously depicted across the literature as the most potent instruments for bridging the gap between emotional regulation, cognitive engagement, and social connection, and thus are empowering both students and teachers to actively engage in co-regulated learning ecosystems (Drigas & Mitsea, 2022; Villani et al., 2021; Reinke et al., 2023)

The convergence of wearable biofeedback, AI-powered analytics, and immersive virtual reality simulations is ushering a new era of early intervention, personalized self-regulation, and scaffolded emotional support that was unimaginable before.

In deviation from the traditional reactive systems, these technologies give effect to Positive Behavioral Interventions and Supports (PBIS), Social and Emotional Learning (SEL), and Universal Design for Learning (UDL), thereby constituting multilayered ecosystems of prevention, engagement, and reflective practice that interrelate and intermingle (Sugai & Horner, 2020; CASEL, 2023; CAST, 2018). There is evidence that the use of digital PBIS frameworks lead to the reduction of behavioral incidents, the improvement of students' self-regulation, and the enhancement of teacher efficacy (McIntosh et al., 2021; Reinke et al., 2023). At the same time, programs focused on SEL, such as gamified mobile apps or emotion-recognition platforms, have been found to raise empathy, prosocial behavior, and the intrinsic motivation of users (McMahon et al., 2021; Kim et al., 2024). Interventions based on UDL principles guarantee that the sensory, cognitive, and affective aspects of diversity are taken into consideration, thus the problem of overstimulation is resolved, and the principle of inclusion is realized for all learners (Edyburn, 2020; Pagliara et al., 2024; Karagianni & Drigas, 2023b).

Besides that, the literature points out the essential role of human facilitation in the matter. Solely relying on digital interventions would not bring the changes needed in learning environments; the determining factor for their success is

the implementation of ethical governance, cultural responsiveness, and teacher competence. The teachers' proficiency in digital technologies, their emotional intelligence, and ethical awareness are the major factors that influence whether the technology will serve as an instrument of care or of control (Ertmer & Ottenbreit-Leftwich, 2010; Hargreaves & Fullan, 2020; Kim et al., 2024; Urbani, 2024).

5.2. Rethinking Behavior as Learning, Not Misconduct

Behaviors that disrupt the situation are, in essence, signals aiming to communicate that the person has unmet cognitive or emotional needs. Using digital technologies, these can be identified, made visible, and talked about, thus, the intervention is changed from being a punishment to teaching. Such view is consistent with the social model of disability (Oliver, 1996) and the affective turn in education (Zembylas, 2021) that put the feeling as the core of the inclusive practice.

Through this interpretation, emotional dysregulation is not a personal defect but rather a mismatch between the students' internal states and the educational environment. Those devices which allow one to monitor oneself (for instance, biofeedback wearables) or to label one's emotions (e.g., mood-tracking applications) help the users to become independent, conscious of themselves, and emotionally literate (Bailenson, 2018; Schneider et al., 2022). Thus, teachers can use the data on behavior to find the openings for teaching, through which they can turn every occurrence into a time for learning empathy, self-reflection, and social understanding (Florian & Beaton, 2018; Noddings, 2012; Gabrieli, 2023).

This reconceptualization moves the historic binary of discipline vs. care that was challenged most severely, behind which the organization of the school system is found, thus, bringing into play the idea of behavioral difficulties as being re-contextualized to relational learning through the teacher-student relationship. The use of technology as a mediator translates educators' affective data into a tool that they can then use to take the next step in emotional and social competence together with students.

5.3. Pedagogical Implications: The Hybrid Model of Digital Inclusion

The data indicate a hybrid pedagogical model that melds evidence-based instruction methods with technology-supported scaffolds. In fact, teacher-led instruction in behavioral and emotional regulation is still the mainstay, however, with the aid of digital means the pedagogy gets a boost in many ways i.e. by showing behavior trends, giving adaptive feedback, and embedding practice in gamified or immersive contexts which thus help to get the students involved and learning reinforced (Durlak et al., 2011; Bear et al., 2022; Baragash et al., 2024). At the same time, immersive and assistive technologies are there to help students rehearse and reflect in a safe environment. For example, virtual reality empathy labs assist in perspective-taking, AI dashboards provide real-time insights into classroom dynamics, while augmented reality experiences facilitate embodied learning (Bailenson, 2018; Lau et al., 2022; McIntosh et al., 2021). These devices are the means by which the user-friendly computing principles get implemented, thus linking cognition and emotion to assist relational and inclusive teaching.

The continuation of digital intervention programs is also tightly linked to whether teachers are up to the task. Well-organized digital literacy courses, peer mentoring groups, as well as professional learning communities help teachers to be ethical, reflective, and skillful when implementing technology in the inclusive curriculum (Drigas & Ioannidou, 2013; Kim et al., 2024; OECD, 2023). Besides, such communities are a place where members can engage in ethical considerations, get emotional support and jointly solve problems thus at the same time being a model of co-regulation for their pupils. In this hybrid model, the focus of technology is as an emotional amplifier rather than as a pedagogical substitute. The development of emotional awareness, self-regulation, as well as social skills is possible through multisensory experiences which promote agency, engagement, and intrinsic motivation.

As a result, the teachers' function changes from that of disciplinarians to co-regulators who facilitate reflection, empathy, and relational understanding (Florian & Beaton, 2018; Ainscow, 2020; Villani et al., 2021). Constructivist and sociocultural theories suggest that behavioral regulation comes through cooperative participation and shared understanding rather than through force (Vygotsky, 1978; Zembylas, 2021). This hybrid model demonstrates the ability of technology to deepen relational learning, thus facilitating the acquisition of emotional and social skills and at the same time leading to the implementation of inclusive educational practices.

5.4. Ethical and Policy Implications

Switching over to digital behavior management raises ethical concerns that are beyond the scope of this article and therefore have to be dealt with in a different way if one wants to effectively and justly implement the procedure. Because

of the fact that AI-initiated systems utilize highly personal aspects of oneself, with the ultimate aim of deciding the affective state of a person and biometric features, a very firm structure is necessary to guarantee transparency, to make sure there is consent and to allow access and control over one's own data to all students.

Schools must not only be allowed but also encouraged to create a group of data stewards made up of students, parents, teachers, and community members. The team's main function would consist of giving ethical oversight and being responsible for the whole process. Another very important point put forward by the band of scholars is that education providers should be deeply committed to the privacy of customers, at the same time, trying to ensure that these privacy rights create a framework that prompts overall well-being (Holmes et al., 2021; Kooli, 2025; Urbani, 2024). Alongside this, revolutionary digital instruments might become a reason for the intensification of educational inequalities in locations which have not been granted any sufficient resources (non-urban or disadvantage areas). Therefore, lawmakers should take action to amplify digital inclusion through the strategic use of public funds, establishment of infrastructure, and programmes designed for the training of educators so that the advent of technology would turn out to be equally advantageous for all learners (Saini et al., 2024; OECD, 2023; Duarte & Carvalho, 2023).

Another vital aspect of educational technology that requires attention is cultural responsiveness because emotional display being part of the social norms differs greatly from one culture to another. In this case, digital interventions to be culturally adequate and inclusive should be developed not only with input from diverse stakeholders but also in the presence of them, which will help to reject the idea of a standard model and that in turn will prevent marginalized groups from being further marginalized even more (Bešić et al., 2024; Holmes et al., 2019). In addition, the freedom of choice of teachers and human power to supervise should not be given up as the main points. The leading role of algorithms is as instruments to support, but not take over, the human pedagogical decision-making process. By having this power to interpret human educators will be enabled to use their local knowledge thus ensuring that technology is a means of ethical proportionality and goes hand in hand with other core caring, relational learning, and inclusiveness values (Williamson & Piattoeva, 2022; Ertmer & Ottenbreit-Leftwich, 2010; Zembylas, 2021). All in all, these ethical and policy requirements serve as a foundation for digital behavior management not only from the justice, empathy, and accountability point of view but also as a way of positioning technology for the practice of care and relational pedagogy instead of as a means of control.

5.5. Teacher Professionalism and Emotional Sustainability

Teachers' emotional well-being can rightly be seen as both a condition and a result of successful digital behavior management. By employing technology to monitor, analyze, and track behavior externally, educators can have their cognitive load reduced, thus they can use more of their energy for relational engagement and the development of supportive classroom climates (Reinke et al., 2023; Hargreaves & Fullan, 2020). Nevertheless, these technological solutions also entail new emotional and professional challenges such as the ongoing understanding of complicated data streams, the ethical handling of sensitive information, and the accountability pressures that come as a result of performance metrics (Williamson & Piattoeva, 2022). Therefore, professional capital in a digital behavior management environment is not merely about being technically skilled but also involves being able to engage in ethical reflection, having emotional resilience and being adaptive in nature.

Organized professional learning communities are instrumental in building this capital as they offer the necessary environment for mutual support, critical discussion, and problem-solving through collaboration which leads to the transformation of technology implementation from a managerial directive to a shared ethical practice (Drigas & Ioannidou, 2013; Kim et al., 2024). In these groups, co-regulation is facilitated as a social and relational practice, thus students get the understanding that reflection, empathy, and emotional learning are continuous processes that depend on the nature of interpersonal and educational contexts.

5.6. Future Research and Policy Directions

The next research on the management of digital behavior should not only be pilot studies but also longitudinal, cross-cultural, and mixed-methods studies that refer to the durability of the effects, brain mechanisms, and socio-cognitive changes caused by the communication of technology-mediated interventions. The longitudinal studies that use insight from affective neuroscience can show how the immersing and multisensory experiences change the neural pathways linked to the regulation of self, empathy, and social cognition thus, they can give a solid research base for the pedagogical design (Gabrieli, 2023; Chalkiadakis et al., 2024; Schneider et al., 2022). Also, studies should not be confined only to wealthy areas to demonstrate that the interventions in low-resource, multilingual, and culturally diverse settings are effective thus, the digital tools can be useful worldwide and can be sensitive to different contexts (Saini et al., 2024; Duarte & Carvalho, 2023). The participatory design that includes student voice, especially the learners with behavioral

challenges, allowing them to express what constitutes regulation and how technology can support their learning and emotional growth, is at the core of this work (Holmes et al., 2019; Urbani, 2024; Zembylas, 2021).

The research that is in line with the policy frameworks at national and local levels is as important as the alignment of policy and practice. Ethical, inclusive, and evidence-based standards for the management of behavior should be the main points of the policy that supports teacher digital literacy, access to technology in a fair manner, collaboration between different disciplines, and educational resources that are open to everyone (OECD, 2023; Hargreaves & Fullan, 2020; Bešić et al., 2024). By integrating research, pedagogy, and policy, these guidelines are intended to be a bridge for ensuring the effectiveness of digital behavior interventions which also have features of being equitable, culturally responsive, and ethically grounded, thus they promote the sustainable use of technology in social-emotional learning and the implementation of inclusive educational practices.

6. Conclusions

Digital behavior management shouldn't be seen as a means of control, rather it aims at building real connection and relational understanding. If technology is used in a thoughtful way, it can facilitate the creation of co-regulation spaces that are dynamic in nature where emotion, cognition, and community come together, thus enabling teachers and students to collaboratively work on behavioral development through the continuous practice of reflection, empathy, and shared responsibility.

In fact, these digital instruments go far beyond the mere recording of behaviors; they open up avenues to recognize patterns, identify triggers, and practice adaptive strategies, thereby making emotional regulation - which is often an invisible process - more understandable and easier to access.

The ultimate goal of using technology in education should be to enhance human flourishing, rather than merely making things more efficient. Digital interventions, by changing the instances of emotional upheaval into teaching opportunities, thereby support educators in showing that behavioral challenges are not to be punished as failures, but rather they are meaningful signals that need to be understood, guided, and given scaffolded support.

Thus, educational institutions are recommitting to their ethical mission of not only educating the intellect but also the hearts, by nurturing a culture that puts relational learning, compassionate response, and inclusive practices at the center. Growth in behavior through the deliberate use of technology becomes a communal, reflective, and context-sensitive journey which, in turn, enables students to acquire self-regulation, empathy, and resilience as well as to maintain a caring and morally guided classroom community.

Compliance with ethical standards

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