“WELL-BEING BY DESIGN: AN INTEGRATED FRAMEWORK FOR YOUTH FLOURISHING IN THE AI-ENHANCED EDUCATIONAL LANDSCAPE”

Research Paper

Khang Anh Tran, DBA Candidate, SSBM, anh.tran@student.ssbm.ch

“Abstract”

The rapid and profound integration of Artificial Intelligence into K-12 and higher educational systems have created a deep paradox. Indeed, while AI can improve students’ well-being thanks to personalization, accessibility, and so on, it is simultaneously causing a significant risk to youth due to increased anxiety, isolation, and passivity. In this sense, the present paper identifies a significant gap in research, which is a combinatorial nature of pedagogical tool development, mental health’s interventions and ethical policy-making that are developed independently one of the other. This led to the substantial death of implementation, thus, creating a so-called implementation chasm as students and teachers are alone with the AI technologies without integrated psychological support. Addressing the topic from this angle, the paper argues that it is necessary to shift the paradigm towards a comprehensive framework called “Well-being by design” that makes psychological metrics and ethics equally non-negotiable in design, procurement, and pedagogical implementation. Based on recent literature, I will propose a four-pillar framework that informs stakeholders in building the pervasively human-centric ecosystem of AI, which would nourish youth flourishing.

Keywords: Artificial Intelligence in Education, Student Well-being, Mental Health, Ethical AI, Educational Technology Policy.

1 Introduction: The Paradox of AI in the Modern Educational Landscape Normal Text…

The shape of education in the modern era is being permanently changed by the fast growing and ubiquitous implementation of Artificial Intelligence (AI). It is in this context of exponential use that we have seen a significant and rapid uptake of AI as studies from 2025 show that between 85% and 92% of students are using AI tools in their academic lives, significantly up on the previous year (HEPI, 2025; Blake, 2025). This is no longer a future trend but the reality today that will have a very real impact on students' investigation, writing and their interaction with learning resources (Vieriu and Petrea, Software tools such Cobra 2026-2037). This technological inclusion provides a great promise, such that it can introduce a degree of personalisation into learning, access to knowledge for students with special educational needs (SEN) and enhance academic engagement (Klimova and Pikhart, 2025a).

But, it is merely a straightforward paradox at the heart of such fast integration. With every positive statistic, there is also a combined risk of comparable magnitude regarding the welfare of young people. Studies are increasingly indicating that AI-infused learning environments may have deleterious psychological consequences, such as increased levels of anxiety, technostress, digital fatigue and loneliness (Klimova and Pikhart 2025b). Moreover, issues around using AI to create content and solve problems have raised concern of it replacing necessary cognitive skills, creating a potential form of "cognitive laziness" which weakens critical thinking skills (Vieriu and Petrea, 2025).

The principal ailment that this paper looks at is a deep and structural segmentation in how AI in education has been approached until now. As a first step, research, policy and development operate as disconnected silos; tools are developed to improve learning (Verma,2023), AI-based interventions to address psychological distress (Sharma et al., 2025) and high-level policies on their ethical use are

crafted (Georgieva et al., 2025). Yet one dangerous “implementation chasm” remains: the siloed approach of change agents themselves. If student uptake of AI tools is on the rise, the development of institutional policies around their implementation and teacher training in using them is faltering (Gouseti et al. 2024). That vacuum is effectively making unvetted, potentially biased and commercially motivated AI tools the default learning environments for an entire generation. Without this, a power vacuum is left which is being filled not by pedagogical logic, but by the two competing forces of commercially and adolescent user led behaviours. In so doing, the hypothetical future concerns of how these practices affect students' wellbeing do not apply to the actual present harms in which we are actively engaging (this relinquishment of educational control to market forces and convenience).

There is a surprising lack of the bridging work of these two fields to provide teachers with a shared feasible approach for safe, light use at school (Klimova and Pikhart, 2025b). This paper contends that in order to leverage AI to derive its potential benefits while avoiding its profound risks, educational stakeholders need to start thinking beyond isolated, reflexive policies. Proposed is an integrative framework, "Well-being by Design", placing psychological well-being and ethical principles front and centre as proactive, non-negotiable elements in the design, procurement and pedagogical use of all AI tools in education. Under this model, well-being is not something that can be fixed as an afterthought or be treated as secondary concern; it is a prerequisite for any functionality designed into technology used to support learning.

2 A Fractured Ecosystem: Synthesising the Literature on AI in Education

The current literature, however, offers a partial and sometimes conflicting narrative on AI in education. In order to understand the importance of integration one needs to begin by unpacking these seemingly separate, yet deeply intertwined groups of literatures — those which describe the pedagogical potential of AI, the myriad of risks to youth well-being, applied uses of AI as a mental health intervention and the related ethical and policy minefield. The locations where these disciplines fail to meet identify a set of gaps that reflect the systemic neglect of the impact of AI on all areas of the young learner ecosystem, resulting in a splintered system with silos that in fact contradict each other.

2.1 The promise of AI-enhanced pedagogy

The rosy vision of AI in education, much of it resting on the idea of what AI can actually do to turn traditional teaching and learning into something more functional. One of which is to accommodate personalized and self-adjusting learning strategies. AI-based platforms permit the students' performance data can be processes in real time and the course rate and content can be adapted based on user profile or even learning profile (Vieriu and Petrea, 2025). This customization could help alleviate student frustration and has actually been documented to dramatically improve scores, outperforming the charged-up 62% on several occasions (Verma, 2023).

AI can also build the most conducive atmosphere for promoting inclusivity in education. Some AI-enabled tools, like text-to-speech programs or real-time audio transcription, however, are likely to undercut some traditional access barriers for students with disabilities and neuro-differences (O'dell 2025; Heisig et al. 2025). While AI increases student participation, helping to hold learners more accountable with the assistance of intelligent tutoring systems (ITS) and chatbots, it's important to note that these resources may not be equally accessible to all students due to technological or economic barriers. These resources: offer academic support 24/7 after class hours, answer students' questions outside of the class, and may promote motivation (Learning Sciences, n.d.). For example, an AI teaching assistant "Jill Watson" at Georgia Institute of Technology handled 10,000 students' messages for a semester with 97% accuracy, indicating the effectiveness in scalable support (Verma, 2023).

Lastly, administrative efficiency is expected to be enhanced since the time-consuming task of grading and keeping records can be automated by AI; some tools have claimed a reduction in the grading time by 70% (Gouseti et al., 2024). In theory, this should allow lecturers to concentrate on more meaningful and high-impact interactions with students.

2.2 Risks to the well-being of youth

In stark contrast with the optimistic perspective, there is considerable evidence on the negative psychological effects of human-AI integration. A growing concern is "technostress," which can be defined as a type of anxiety or discomfort caused by the expectation to always use new technologies, sometimes with lack of education or training, and without a sufficient support (Klimova and Pikhart, 2025b). Added to this the overall increase in screen time can result in digital fatigue and burnout for students as well as for teachers (Kundu and Bej, 2025).

In truth, AI-based interaction is a threat as it is to social-emotional learning. Excessive use of AI in communication and collaboration leads to a reduction in face-to-face interactions that are essential to develop social competences such as empathy, active listening and conflict resolution (Klimova and Pikhart, 2025b). This might result in a sense of social isolation and loneliness, since non-empathetic AIs interactions can be considered as not enough for real inter-human behavior (Kundu and Bej, 2025). There are also huge questions about what this will do to the development of the cognition. This may cause a dangerous phenomenon called cognitive offloading, by which students would regress in their competences to think critically, solve problems independently and reason in creative innovative terms (Vieriu and Petrea, 2025). In many instances the strong transparency for the reduction of AI-influenced cheating to a form of forensic within schools is a symptom of what does concern actors (Gouseti et al. 2024, p.).

2.3 The rise of AI as a mental health intervention

A particular and illustrative subset of the review focused on AI as an intervention for youth mental health problems. While on the one hand AI has potential for early detection and intervention, These predictive models that have been created focus on identifying adolescents who are at high risk for future mental illness, using algorithms that are quite accurate in their estimations of such states which may lead towards enabling proactive care (Posner et al. AI-driven conversational agents (CAs), such as chatbots, are being promoted as a solution to fill this gap by providing mental health support that is scalable, accessible and immediate (Sharma et al.,2025).

Yet, evidence of how well these interventions work at reducing digital divides is mixed and limited. Meta-analyses do suggest that CAs may have a medium effect on reducing depressive symptoms, however their impact on generalised anxiety and stress is usually statistically non-significant (Feng et al., 2025). Most importantly, there is no any significant benefit of overall psychological well-being with these interventions (Li et al., 2023). The game is limited in how effective this system is, and then sloppy with design on top of that. For example, Sharma et al., 2025 found that among 88 studies in a systematic review, the vast majority of AI mental health research was based on diagnosis rather than treatment or prognosis. A critical but disappointing conclusion is that the adolescents and clinicians (i.e., end-users) themselves are seldom included in designing and validating interventions'LBLs. This in turn results in tools that may not be clinically relevant, with an unknown risk of bias and insufficient validation for health care use (Sharma et al., 2025). This failure is a perfect example of the general problem: technology is still built with developer metrics — scalability, ease of use or similar things — instead of user outcomes. This is a classic example of how technology for students has not been designed with the student.

2.4 The ethical and policy quagmire

There are considerable ethical hurdles facing AI in education that current policies are ill-equipped to deal with. Stay tuned for a follow-up on the most common ethical issues with AI - algorithmic bias and data privacy. Testing for bias AI systems trained with biased data risk perpetuating or even exacerbating existing societal inequalities, which can result in discriminatory outcomes disproportionately disadvantaging students from marginalised communities (Gouseti et al., 2024). On the other hand, most of the AI tools require a huge collection of massive student data and storage for student sensitive information, which results in major threats regarding data privacy and security as it has led to protection issues with chances of data breaches and improper use (Kundu and Bej [2025]).

The overwhelming limitation to tackling these challenges is not unrelated: it is our own most basic AI ethical illiteracy. While research shows that students often have naïve views, such as thinking AI cannot be biased, and that teachers feel not sufficiently prepared to teach these complex ethical questions (Gouseti et al., 2024; An et al., 2024). Accordingly, several high-level ethical frameworks have been suggested by EDUCAUSE (Georgieva et al., 2025), Cal State Fullerton in the ETHICAL framework (Wynants et al., 2025), and the Washington Office of Superintendent of Public Instruction on the H-AI-H model (OSPI, 2024a). For instance, broader international EAL frameworks tend to be conceptual models that have yet to be well interpreted and translated down into useable classroom level guidance (An et al., 2024). This disconnect means that principles of fairness, transparency and accountability are not actually determining the behaviour that happens on a daily basis.

The disciplinary fragmentation is not just self-evident; it is self-sabotaging. Every one of those siloed approaches drives against the goals of the others, and you get a highly dysfunctional system. A pedagogical tool facilitating learning efficiency but causing anxiety is, in the end, a bad pedagogical tool, since well-being acts as a prerequisite for learning. A mental health chatbot that increases access but damages the ability to form real-world connections is not fully enabling health. An ethical policy that educators cannot comprehend or implement is not in practice ethical. It is this system failure, in which technology is "done" without a clear articulation of and a strategy for student flourishing, that urgently justifies an integrated practice.

3 Methodology

The methodology adopted in this paper is based on the principles of systematic review and framework synthesis. This is essentially a qualitative interpretive approach aimed at developing a new theoretical model by comparing and synthesis of findings in the literature. This approach is especially useful for answering research questions seeking a holistic understanding of a complex and multifaceted phenomenon as well as locating gaps or discrepancies that warrant a new conceptual perspective.

The data for this study consists of a collection of peer-reviewed research papers and expert briefs posted primarily from 2023 to 2025. This literature consists of various high-quality sources including systematic reviews, meta-analyses, empirical studies, institutional policy briefs and industry reports and allows a comprehensive and up-to-date view on the topic.

The main analytical method employed is a thematic analysis, which refers to an established qualitative approach for detecting, examining and reporting themes (or patterns) in data (Klimova and Pikhart 2025a;). The workflow was composed of multiple iterations:

1. **Familiarisation:** A full reading of all included articles was performed in order to become familiar with the extent, type and content of available evidence.
2. **Initial Coding:** The salient concepts, findings and arguments were systematically coded from the documents including AI’s value, risks, ethical considerations and ways in which to operationalise it.

3. **Theme Generation:** Emergent themes were generated inductively and categorised into overarching, higher-order themes. This phase uncovered the four competing and conflicting research threads common to the literature review, “Pedagogical Promise,” “Psychological Peril,” “AI as a Access of mental health intervention” and the "Ethical and Policy Quagmire”.
4. **Reviewing and Refining Themes:** Complexification of relationship between these themes were interrogated, with the central contradiction of fragmentation and notion of "implementation chasm" emerging.
5. **Framework Development:** The key learnings from this thematic synthesis informed development of the ‘Well-being by Design’ framework. Through this, the last phase progressed in organizing the pillars of the framework to logically respond to the uncovered research gap and systemic issues emanating from analysis.

This synthesis is robustly underpinned given it only uses the supplied peer-reviewed and expert sourced materials. Its soundness is based on a reconstruction showing that the new conceptual model can be logically derived from, and indeed systematically deals with inconsistencies and gaps found in previous work..

4 Findings: Bridging the Chasm with a "Well-being by Design" Framework

A structured review of the literature demonstrates a clear and pressing need to move towards a paradigm shift. The existing fragmented implementation of an educational, well-being, and ethics agenda in siloes -often at odds with one another -has produced the 'implementation chasm'. Within this gulf, we have the unbridled and unchecked race for students to be taking up AI by swinging rapidly into a situation where more is acquired than educational systems can provide protective, equitable, or safe scaffolding for (HEPI 2025). Nevertheless, there will still be those who seek to reap (Mastery Coding, 2025). This creates a de facto learning design that may be unhealthy (psychologically) (Klimova and Pikhart, 2025c), non-equitable (Gouseti et al., 2024), and even harmful to the deep, critical learning it intends to facilitate (Vieriu and Petrea, 2025). To narrow this gap, this paper presents the "Well-being by Design" model. This is a proactive human-centered model that incorporates well-being and ethics into the entire lifecycle of AI in education, not as add-ons or afterthoughts, but as central design considerations. The framework is founded on four linked columns, interlocked to successfully implement general principles into practical strategies for professionals in education.

4.1 Pillar 1: Proactive ethical vetting in procurement and development

The first pillar considers the access point of AI into the educational system: its choice and development. The idea is that institutions have to move from being passive recipients of technology to act as informed, questioning consumers. This will mean a radical shift from the current procurement paradigm of technology-first procurement to one that puts humanity first, where ethical integrity and potential impact on well-being are key decision-making variables (Merlyn Mind, 2025).

Put in place, create-and-implement Well-being and Ethics Rubric for vetting new AI tools by institutions. However, this rubric is meant to assess platforms as opposed to the actual applications that are deployed on a platform (e.g., the application of certain security criteria to apps connected through a social networking platform; privacy issues and professional codes of practices related to Facebook app developers (Holt, 2056)) as well as platforms according to a range of technical criteria, including pressurizing children to buy V-bucks in Fortnite and an entirely girl-centric range, while bulkier models favour the notion that technology is not gender specific and that there are wider societal influences (Merlyn Mind, 2025). This will also require us demanding more from vendors when it comes to showing us their training data sets and algorithms models (Georgieva et al., 2025).

Procurement decisions should also prioritize instruments designed to enable human-in-the-loop (HIL) supervision in the way educators and administrators should have the final word -- and not place it instead in the hands of automated systems (Wynants et al., 2025). Careful evaluation of whether the tools adopted align with your community values and education goals involves a cross-functional group of stakeholders [with representation from education administrators, parent, teacher, student—not just the IT person]" (Pear Deck Learning Team 2025).

4.2 Pillar 2: Integrated AI and social-emotional literacy

The second pillar is that just teaching students about AI is not really sufficient; the objective is rather to help them deal with the psychological and social consequences of that exposure. In summary, as suggested by Shi et al. (2025), AI literacy is not just a skill like math or coding; it serves as both an SEL competency and teaches us to become resilient, critical, and empathetic digital citizens.

For example, this might be reflected in curricula that successfully integrate AI concepts and SEL skills. If you are to teach that biased data sets can result in unfair outcomes (Gouseti et al., 2024), when teaching about algorithmic bias, say, do not merely explain the point, but rather catalyze empathy and discussions on social justice. The translated example above implies that an AI or ML teaching should initiate with a training of the (digital) critical abilities and media literacy to prevent all students from being softly indoctrinated by generatively-generated material (Gouseti et al., 2024). When it comes to technology, a possible case of new media being used creatively to construct the "5 Cs" is the Anaheim Union High School District in California … unless it too explodes due to poor planning (Fullan and Matsuda, 2024). However, what is called for instead is a holistic approach, one that trains students not just to interact with AI but also to use artificial intelligence to think — and think ethically and empathetically.

4.3 Pillar 3: Mandating "Human-AI-Human" (H-AI-H) pedagogical models

The third pillar offers an in-the-moment pedagogical response to the issues of cognitive offloading and sociability. In order for AI to be leveraged as a tool that augments human intellect and not replace it, the "Human-AI-Human" (H-AI-H) model of design and development must become the standard pedagogical vehicle through which students engage with these tools in classrooms (OSPI, 2024a). This model organizes learning tasks into three phases:

- **Human Inquiry:** The student originates with their own critical idea, research question, or creative urge.
- **AI Production:** The student is now using AI as a resource — not as an output machine but rather for generating ideas, building out sources, drafting a starting point, or gaining feedback.
- **Reflection and agency:** The student evaluates, refines, and synthesises the AI outputs, which becomes a unique reflection of their analysis and imagination.

The use of this model actually forces us to reconsider how we assign work consciously. Instead of requesting the end product that an AI could produce, what educators should be considering is the human process of inquiry, evaluation, and synthesis (OSPI, 2024b). This perspective pivots the pedagogical aim from avoiding "cognitive offloading" (Vieriu and Petrea, 2025) to promoting higher-order cognitive skills. Take this software upgrade you now have, for example: It elevates the student as manager of a brilliant but flawed tool, whose most valuable skills are not finding stuff on it but knowing and directing its limitations in terms of prompting mechanism design, reliability testing, establishing relevance thresholds, distance from necessity, etc. This is a cognitive apprenticeship for the 21st century, one where we learn how to work with non-human intelligence as an essential skill. Educators need to commit to modeling the process of using AI as a "thinking partner" or Socratic questioner rather than as an oracle or ghostwriter (Faulkner Online, 2025). This way maintains academic rigor while cultivating the important ability of working effectively with intelligent systems.

4.4 Pillar 4: Continuous, privacy-preserving well-being monitoring

The final pillar is that institutions need to measure the impact of AI in order to govern it. For better than simply anecdotal evidence, we need a system for tracking student well-being in an ongoing way and on a mass level, but done responsibly from the standpoint of privacy. This provides institutions with insight into the effects of the technologies they implement and gives them data-driven levers for control.

This can be achieved through periodic, anonymized "pulse" surveys of the whole university population tracking key well-being metrics (including technostress, perceived social connectedness, academic anxiety and self-reported critical engagement). Institutions can correlate this data with AI tool usage patterns to detect negative trends that might have just started (Mansoor and Ansari, 2025). For instance, if the introduction of a new AI platform is associated with an increase in reports of student anxiety, that would warrant re-evaluating what's used and how it's deployed. This feedback loop is a key element to improving, and adapting policies and practices on the basis of evidence for their impact in terms of student community (Sharma et al., 2025). This guarantees that the work to innovate technology is tied to its guiding end: helping students thrive.

What makes this structure valuable is that it provides a way to condense an enormous amount of theory into something practical; basically, a very thinking-friendly format. The Table below breaks down the four pillars into operational guidelines and practical applications for both leaders and educators, therefore providing a seamless continuum between esoteric theory and daily work. This table then becomes the 'executive summary' of the report, providing a practical contribution for a time-poor leader.

Pillar	Guiding Principle	Application for Administrators/Policymakers	Application for Educators
1. Proactive Ethical Vetting	Shift from a technology-first to a human-first procurement model, prioritising ethics and well-being.	Develop and mandate a "Well-being & Ethics Rubric" for all AI tool procurement. Require vendor transparency on data and algorithms. Involve diverse stakeholders in vetting (Merlyn Mind, 2025).	Participate in school-level technology evaluation committees. Advocate for tools that support human oversight and align with pedagogical values.
2. Integrated AI & SEL Literacy	AI literacy must be taught in conjunction with social-emotional learning (SEL) to build resilient and critical digital citizens.	Fund and mandate the development of integrated curricula. Support professional development that combines technical AI training with SEL and ethics.	Design lessons that connect AI concepts (e.g., bias) with SEL skills (e.g., empathy). Use AI to foster the "5 Cs" (creativity, critical thinking, etc.) (Shi et al., 2025).

3. Mandating H-AI-H Pedagogy	AI should augment, not replace, human thought and interaction. The "Human-AI-Human" model must be the default pedagogical approach.	Establish the H-AI-H model as official district/institutional guidance. Provide exemplars and training on H-AI-H assignment design (OSPI, 2024a).	Redesign assignments to assess the human process of inquiry and reflection. Explicitly teach students to use AI as a "thinking partner."
4. Continuous Well-being Monitoring	To manage the impact of AI, institutions must measure it through continuous, privacy-preserving data collection.	Implement regular, anonymised well-being pulse surveys. Establish a feedback loop where this data informs AI policy and tool deployment reviews.	Participate in surveys and use classroom observations to provide qualitative feedback on the impact of AI tools on student engagement and stress (Sharma et al., 2025).

Table 1. The "Well-being by Design" Framework: Principles and Practical Applications (Author's own creation, 2025).

5 Implications and Recommendations

The "Well-being by Design" framework provides a strategic roadmap for moving from abstract principles to concrete practice. Its successful implementation, however, depends on concerted action from all stakeholders within the educational ecosystem. The following recommendations translate the framework's four pillars into specific, actionable steps for policymakers, educators, and AI developers.

5.1 For policymakers and educational administrators

Leaders at the district, state, and institutional levels are uniquely positioned to drive systemic change by embedding the "Well-being by Design" framework into governance and resource allocation.

- **Adopt Integrated Governance Structures:** The fragmented nature of current policy must be overcome. Administrators should create unified AI governance committees that include representation from IT, academic affairs, student services, and, crucially, teachers and students (Pear Deck Learning Team, 2025). This body would be responsible for overseeing the implementation of all four pillars of the framework.
- **Mandate "Well-being by Design" in Procurement:** All technology procurement policies must be revised to include a mandatory ethical and well-being rubric, as outlined in Pillar 1. Contracts with vendors must explicitly require transparency regarding data usage, algorithmic models, and compliance with privacy laws like FERPA and COPPA (Merlyn Mind, 2025; Kelly, 2025).
- **Fund Robust and Continuous Professional Development:** A primary barrier to effective AI implementation is the lack of teacher training (Mastery Coding, 2025). Policymakers must earmark dedicated, ongoing funding for professional development that is itself integrated, combining technical instruction on AI tools with pedagogical training on the H-AI-H model and ethical guidance on navigating issues like bias and privacy (Merlyn Mind, 2025; SREB, 2025).

5.2 For educators

Educators lead the charge on front lines of AI implementation, so this definitely involves a formative role in how students are exposed to AI day in and day out.

- **Assume the Position of "Ethical Guide":** Educators should stop being just mediators of technology, and grow into guides in its ethical use. This includes teaching students proactively about the limitations of AI, such as its potential for bias and misinformation, and co-creating explicit standards for responsible use in the classroom (Pear Deck Learning Team, 2025; Cornell University Center for Teaching Innovation, n.d.).
- **Adopt H-AI-H Pedagogy:** Instructors should actively modify assignments to fit the Human-AI-Human model. In other words, we need to assess the human process of inquiry and critique OSPI (2024a); MIT Sloan Teaching and Learning Technologies, 2025a), creative synthesis (Mishra & Koehler, 2003) with reflection at its center of gravity instead of the final product that an AI can generate.
- **Advocate for Resources and Sit on Governance:** Educators must leverage their on-the-ground experience to help advocate for the vetted tools, training and resources that will enable them to responsibly roll out AI. They need to be collaborating with education leaders in the district and in schools so that policy matches practice (ThoughtExchange, 2025).

5.3 For AI developers

The developers of teaching AIs have a responsibility for the influence they have on young users. It will take a sea change in overall design philosophy.

- **Adopt User-Centred and Ethical Design Practice:** The absence of end-user participation in the design of educational and mental health AI is a key failure (Chapman et al., 2025). In addition, developers should follow a user-centered design process, involving educators, students and mental health professionals early in the design and development process as well as throughout testing and iterative processes.
- **Prioritise Transparency and Interoperability**: "We priority transparency and the ability for our product to scale between products." Black box algorithms will not work in an educational environment. Developers need to create tools with clear and understandable algorithms, as well as providing explicit, accessible documentation on their data policies. Tools should also enable interoperability so that they can be reused to interface with institutional systems for preservation of privacy as health is monitored..

5.4 Avenues for further research

The "Well-being by Design" framework is a conceptual model that requires empirical validation. Future research should focus on several key areas:

- Conducting longitudinal studies to measure the long-term impact of implementing the framework on both student academic outcomes and key psychological well-being metrics.
- Developing and validating standardised instruments for assessing "GAI-driven well-being" in K-12 and higher education contexts, moving beyond simple satisfaction surveys to capture nuanced constructs like technostress, cognitive engagement, and social connection (Shi et al., 2025).
- Performing comparative experimental studies that contrast the effects of different pedagogical models (e.g., H-AI-H versus unrestricted AI use) on the development of students' critical thinking, creativity, and problem-solving skills.

6 Conclusion

AI and education are at a pivotal point of unification. Partitioned research and development, policy and technological diffusion while institutions lag creates an unacceptable and dangerous drift. The hype of AI reshaping education is empty when the very psychological and emotional well-being of the children it was supposed to help serve as an afterthought or an externality that you have to manage after-the-fact.

Justifying a `paradigm' shift, as claimed in this paper. Apathy—Not Well-being by Design I would suggest that the spirit of "Well-being by Design" framework is to shift away from a pattern of "reactive problem solving" towards something systemic, proactive, integrated and humane. By baking in ethical reflections and well-being metrics into the very process of designing, purchasing, and deploying AI itself, the framework concretizes a workable structure for aligning technology development with core educational and humanistic values. It claims that such a tool, which is the means by which the learner must grow as a person (cognitive growth + social and emotional development) in order to understand it and use it, would be educational.

Ultimately it is not about "smarter" schools with more efficient technology. The job is to help build an incubator for a dynamic, just and psychically sound learning ecosystem, in which technology is leveraged for human thriving. It will take thoughtful political parents, design-savvy developers and no-nonsense teachers working together. By taking a 30,000-foot look at the field, we ensure that we do not define an era of AI in education by the maturity of its tools, but rather by the health and sovereignty it lends to those who operate them.

References

American Psychological Association (2025) 'Health advisory: Artificial intelligence and adolescent well-being'. Available at: https://www.apa.org/topics/artificial-intelligence-machine-learning/health-advisory-ai-adolescent-well-being (Accessed: 1 August 2025).

An, Q., Yang, J., Xu, X., Zhang, Y. and Zhang, H. (2024) 'Decoding AI ethics from Users' lens in education: A systematic review', *Heliyon*, 10(20), p.e39357. doi:10.1016/j.heliyon.2024.e39357.

Banerjee, D. (2025) 'AI is transforming schools in 2025, with 86% of students and 60% of teachers using AI tools, as the education market heads toward $88.2B by 2032', *Humanize AI Blog*, 27 April. Available at: https://humanizeai.com/blog/ai-in-school-statistics/ (Accessed: 1 August 2025).

Blake, S. (2025) 'Number of students using AI for schoolwork surges by double-digits', *Newsweek*, 21 July. Available at: https://www.newsweek.com/number-students-using-ai-schoolwork-surges-double-digits-2101974 (Accessed: 1 August 2025).

Chen, J., Yuan, D., Dong, R., Cai, J., Ai, Z. and Zhou, S. (2024) 'Artificial intelligence significantly facilitates development in the mental health of college students: a bibliometric analysis', *Frontiers in Psychology*, 15, p.1375294. doi:10.3389/fpsyg.2024.1375294.

Cornell University Center for Teaching Innovation (n.d.) 'Ethical AI for teaching and learning'. Available at: https://teaching.cornell.edu/generative-artificial-intelligence/ethical-ai-teaching-and-learning (Accessed: 1 August 2025).

Deckker, D. and Sumanasekara, S. (2025) 'Systematic review on AI in special education: Enhancing learning for neurodiverse students', *EPRA International Journal of Multidisciplinary Research (IJMR)*, 11(2). doi:10.36713/epra20360.

Faulkner Online (2025) 'The future of learning: Positive applications of AI in education', *Faulkner University News*, 28 February. Available at: https://www.faulkner.edu/news/the-future-of-learning-positive-applications-of-ai-in-education/ (Accessed: 1 August 2025).

Feng, Y., Hang, Y., Wu, W., Song, X., Xiao, X., Dong, F. and Qiao, Z. (2025) 'Effectiveness of AI-driven conversational agents in improving mental health among young people: Systematic review and meta-analysis', *Journal of Medical Internet Research*, 27, p.e69639. doi:10.2196/69639.

Fullan, M. and Matsuda, M. (2024) 'Emotional intelligence and AI together can help lessen the student mental health crisis', *Education Week*, 4 January. Available at: https://www.edweek.org/leadership/opinion-emotional-intelligence-and-ai-together-can-help-lessen-the-student-mental-health-crisis/2024/01 (Accessed: 1 August 2025).

Georgieva, M., Webb, J., Stuart, J., Bell, J., Crawford, S. and Ritter-Guth, B. (2025) 'AI ethical guidelines', *EDUCAUSE*, 24 June. Available at: https://library.educause.edu/resources/2025/6/ai-ethical-guidelines (Accessed: 1 August 2025).

Gouseti, A., James, F., Fallin, L. and Burden, K. (2024) 'The ethics of using AI in K-12 education: a systematic literature review', *Technology, Pedagogy and Education*, 34(2), pp. 161–182. doi:10.1080/1475939X.2024.2428601.

HEPI (2025) 'Student generative AI survey 2025', *Higher Education Policy Institute*, 26 February. Available at: https://www.hepi.ac.uk/2025/02/26/student-generative-ai-survey-2025/ (Accessed: 1 August 2025).

Kelly, R. (2025) '6 policy recommendations for incorporating AI in the classroom', *Campus Technology*, 24 February. Available at: https://campustechnology.com/articles/2025/02/24/6-policy-recommendations-for-incorporating-ai-in-the-classroom.aspx (Accessed: 1 August 2025).

Klimova, B. and Pikhart, M. (2025) 'Exploring the effects of artificial intelligence on student and academic well-being in higher education: a mini-review', *Frontiers in Psychology*, 16, p.1498132. doi:10.3389/fpsyg.2025.1498132.

Kundu, A. and Bej, T. (2025) 'Psychological impacts of AI use on school students: a systematic scoping review of the empirical literature', *Research and Practice in Technology Enhanced Learning*, 20, p.030. doi:10.58459/rptel.2025.20030.

Learning Sciences (n.d.) 'How artificial intelligence in education is transforming classrooms', *SMU*. Available at: https://learningsciences.smu.edu/blog/artificial-intelligence-in-education (Accessed: 1 August 2025).

Li, H., Zhang, R., Lee, Y., Kraut, R.E. and Mohr, D.C. (2023) 'Systematic review and meta-analysis of AI-based conversational agents for promoting mental health and well-being', *npj Digital Medicine*, 6(1), p.236. doi:10.1038/s41746-023-00979-5.

Mansoor, M. and Ansari, K. (2025) 'Artificial intelligence-driven analysis of telehealth effectiveness in youth mental health services: Insights from SAMHSA data', *Journal of Personalized Medicine*, 15(2), p.63. doi:10.3390/jpm15020063.

Mastery Coding (2025) 'AI in education: The current landscape in 2025'. Available at: https://www.masterycoding.com/blog/landscape-of-ai-in-education (Accessed: 1 August 2025).

Melo-López, V.-A., Basantes-Andrade, A., Gudiño-Mejía, C.-B. and Hernández-Martínez, E. (2025) 'The impact of artificial intelligence on inclusive education: A systematic review', *Education Sciences*, 15(5), p.539. doi:10.3390/educsci15050539.

Merlyn Mind (2025) 'Fostering responsible and safe AI implementation in K-12 education: A policy brief for teachers and principals'. Available at: https://www.merlyn.org/blog/fostering-responsible-and-safe-ai-implementation-in-k-12-education-a-policy-brief-for-teachers-and-principals (Accessed: 1 August 2025).

MIT Sloan Teaching and Learning Technologies (2025a) *Getting started with AI-enhanced teaching: A practical guide for instructors*. Available at: https://mitsloanedtech.mit.edu/ai/teach/getting-started/ (Accessed: 1 August 2025).

MIT Sloan Teaching and Learning Technologies (2025b) *Practical strategies for teaching with AI*. Available at: https://mitsloanedtech.mit.edu/ai/teach/practical-strategies-for-teaching-with-ai/ (Accessed: 1 August 2025).

Office of Superintendent of Public Instruction (2024a) *Human-centered AI guidance for K–12 public schools: Building AI foundations: A human-centered approach*. Version 3.0. Olympia, WA: Office of Superintendent of Public Instruction. Available at: https://ospi.k12.wa.us/ai (Accessed: 1 August 2025).

Office of Superintendent of Public Instruction (2024b) *A practical guide the classroom implementing AI: Building on the "Human inquiry AI Human empowerment" framework*. Version 1.0. Olympia, WA: Office of Superintendent of Public Instruction. Available at: https://ospi.k12.wa.us/ai (Accessed: 1 August 2025).

Pear Deck Learning Team (2025) 'How to develop an effective AI policy for K–12 schools', *Pear Deck Learning Blog*, 13 May. Available at: https://www.peardeck.com/blog/how-to-develop-an-effective-ai-policy-for-k-12-schools (Accessed: 1 August 2025).

Posner, J., Hill, E., Engelhard, M., Kashyap, P., Raffanello, E., Wang, Y., Moffitt, T.E. and Caspi, A. (2025) 'AI model predicts risks and potential causes of adolescent mental illness', *Nature Medicine* [Preprint].

Sharma, G., Yaffe, M.J., Ghadiri, P., Gandhi, R., Pinkham, L., Gore, G. and Abbasgholizadeh-Rahimi, S. (2025) 'Use of artificial intelligence in adolescents' mental health care: Systematic scoping review of current applications and future directions', *JMIR Mental Health*, 12, p.e70438. doi:10.2196/70438.

Shi, J., Liu, W. and Hu, K. (2025) 'Exploring how AI literacy and self-regulated learning relate to student writing performance and well-being in generative AI-supported higher education', *Behavioral Sciences*, 15(5), p.705. doi:10.3390/bs15050705.

Southern Regional Education Board (2025) *A roadmap for responsible and effective use of AI in K-12 classrooms*. Available at: https://www.sreb.org/news/roadmap-responsible-and-effective-use-ai-k-12-classrooms (Accessed: 1 August 2025).

ThoughtExchange (2025) *The playbook for responsible use of AI in education*. Available at: https://thoughtexchange.com/guide/the-playbook-for-responsible-use-of-ai-in-education-with-thoughexchange/ (Accessed: 1 August 2025).

University of San Diego (2024) 'AI in education: 39 examples'. Available at: https://onlinedegrees.sandiego.edu/artificial-intelligence-education/ (Accessed: 1 August 2025).

Verma, N. (2023) 'How effective is AI in education? 10 case studies and examples', *Axon Park*, 8 February. Available at: https://axonpark.com/how-effective-is-ai-in-education-10-case-studies-and-examples/ (Accessed: 1 August 2025).

Vieriu, A.M. and Petrea, G. (2025) 'The impact of artificial intelligence (AI) on students' academic development', *Education Sciences*, 15(3), p.343. doi:10.3390/educsci15030343.

Wynants, S., Childers, G., De La Torre Roman, Y., Budar-Turner, D. and Vasquez, P. (2025) *ETHICAL principles AI framework for higher education*. California State University, Fullerton. Available at: https://www.fullerton.edu/it/ai/ethical-principles-ai-framework.html (Accessed: 1 August 2025).