

Human-Centered AI in Higher Education

A Framework for Sustainable Student Wellbeing

Shmoody | 2026 | Prepared for the ASU+GSV Summit

Core Argument: *AI is simultaneously a growing problem and a potential solution for student mental health and wellbeing. Whether it helps or harms depends entirely on how it is designed. Human-centered design is not a feature - it is the foundation.*

Introduction

Higher education is at an inflection point. Student mental health has reached crisis levels at campuses across the country, while artificial intelligence is reshaping nearly every dimension of institutional life. These two forces are not unrelated. The same technological acceleration that promises to transform teaching, operations, and student services also carries significant risk for the very students institutions are trying to support.

This paper argues that AI will not automatically improve the student wellbeing crisis and that, without intentional human centered design, it may make things meaningfully worse. The institutions that get this right will be those that treat wellbeing AI not as a logistics upgrade, but as a fundamentally different kind of challenge: one that requires putting students first, earning their trust, and building technology around how human beings actually seek help, build habits, and flourish.

1. AI Acceleration Is a Wellbeing Risk, Not Just a Solution

The human brain evolved over hundreds of thousands of years to process information at a pace defined by conversation, observation, and reflection. Modern digital environments have radically compressed that timeline and the consequences are increasingly visible in data on student mental health.

Research in cognitive neuroscience has documented that rapid information flows reshape how the brain allocates attention, processes meaning, and regulates emotion (Loh & Kanai, 2016; Firth et al., 2019). Social media provided the first large-scale test of what happens when algorithmically-driven technology optimizes for engagement without regard for human cognitive limits. The results have been damaging, particularly for adolescents (Haidt & Twenge, ongoing). Generative AI represents an acceleration of that dynamic, not a departure from it.

A 2025 study from MIT found that increased AI chatbot use correlated with higher rates of loneliness and psychological dependence among users - a striking finding given that many of these tools were designed, at least in part, to provide support (Fang et al., 2025). This does not mean AI cannot help. It means that the design of AI matters enormously. Human-centered design mitigates these risks. It prioritizes student agency, meaningful connection, and cognitive health. AI deployed without those guardrails may inadvertently deepen the very crisis it aims to address.

Meanwhile, the campus mental health crisis itself continues to intensify. Students are arriving at college with higher rates of anxiety, depression, and trauma than previous generations, while traditional counseling models - built around individual therapy at a 1:1 ratio - struggle to scale to meet demand (Lipson et al., 2019; Mowreader, 2024b; APA, 2023). The gap between need and available support is not closing. Universities that deploy AI without a human-centered framework risk layering new harm on top of existing crises.

2. Where Higher Education AI Investment Goes Today - and Where It Doesn't

Colleges and universities have embraced AI with genuine enthusiasm and good intentions. The investments being made are real, and the problems they address are legitimate. But a clear pattern has emerged in where AI dollars flow; student wellbeing is largely absent from the picture.

The two dominant areas of AI investment in higher education are:

- Logistics and operations: enrollment management, financial aid processing, scheduling, predictive analytics for retention risk, and administrative efficiency.
- Classroom and academic support: AI tutoring systems, plagiarism detection, adaptive learning platforms, grading assistance, and personalized academic pathways.

Both categories address real needs. But they leave a significant gap. Universities serve students as whole people - not just learners and administrative records - and student wellbeing is one of the most powerful determinants of whether students succeed academically and remain enrolled. Mental health is consistently cited as the number one reason students leave college before completing their degree (Gallup, 2023). Yet wellbeing receives a fraction of the AI investment that logistics and academics do.

When AI investment does touch mental health it tends to focus on crisis identification: early warning systems that flag students in distress, after-hours chatbot triage, and risk scoring models. These tools have value, but they address the far end of the wellbeing spectrum, serving students who are already experiencing serious difficulty. The preventive middle - the daily habits, connections, and self-awareness practices that keep students from reaching crisis in the first place - remains largely unaddressed by institutions (Oklahoma Higher Education, 2024; Chessman et al., 2023).

3. The Solution: An Engagement Layer That Students Actually Use

Closing the wellbeing gap requires more than deploying another institutional tool. It requires building something students choose to engage with consistently, voluntarily, and because it genuinely helps them. This is the concept of an engagement layer: a human-centered digital interface that creates real value for students first, and generates institutional insight as a natural byproduct of that engagement.

What students actually need from wellbeing AI:

- **An accessible on-ramp to wellness.** Most students who are struggling do not walk into a counseling center (Mowreader, 2024c). Stigma, uncertainty about whether their problems are "serious enough," and simple unfamiliarity with how to seek help all create barriers. Effective wellbeing AI offers a low-stakes, non-stigmatizing entry point - a place where students can begin to understand and act on their mental health without the friction of traditional pathways. It offers an easy on-ramp to wellbeing resources 24 hours a day, 7 days a week, 365 days a year.
- **Data privacy and genuine control.** Students will not engage authentically with wellbeing tools they do not trust. Human-centered design means students understand exactly what data is collected, control what they share and when, and have confidence that their wellbeing information is used to help them - not to monitor or report on them. Trust is not a nice-to-have; it is the prerequisite for any meaningful engagement.
- **Connection to human support.** AI should function as a bridge, not a destination. When students need deeper care, effective wellbeing technology creates clear, frictionless pathways to counselors, advisors, peer support, and other human helpers rather than relying solely on chatbot responses that simulate care (Harris et al., 2022; Mowreader, 2023).
- **Tools for building positive habits.** Resilience is built through consistent practice, not crisis intervention alone. Not every student needs therapy, but many need opportunities to build coping skills and connect with peers (Abrams, 2022). Preventive, skill-building approaches are foundational to campus mental health (Chessman et al., 2023). Wellbeing includes connection, purpose, and positive emotion, not merely the absence of illness (American Psychiatric Association, 2023). These are not soft extras. They are core to flourishing.
- **Personalized, actionable support.** Generic wellness content produces generic results. Effective wellbeing approaches tailor resources and recommendations to individual students, taking into account their circumstances, preferences, history, and needs, and break support into concrete, manageable steps that do not feel overwhelming (Mowreader, 2025a).
- **Non-judgmental, adaptive guidance.** Students are more likely to engage honestly when they don't feel evaluated or judged. Meeting students where they are, whatever their mental health status, background, or

circumstances, is essential to building the kind of trust that sustains engagement over time (Cohen, Graham, Lattie, 2022)

- **Safety and crisis recognition.** When a student is in crisis, wellbeing AI must recognize it and respond appropriately by connecting the student immediately to human help, rather than generating additional chatbot responses. Robust safety protocols are non-negotiable in any AI system that touches student mental health (SAMHSA, 2024).

4. Institutions Need Deep Engagement Data - But Current Systems Don't Generate It

Universities have a legitimate and urgent need for better data on student wellbeing. The tools most institutions rely on today, however, are poorly suited to provide it.

The current limitations are structural:

- **Low response rates and infrequent collection.** Annual or semesterly wellness surveys - the primary data source for most institutions - typically achieve response rates of 20-30% (NSSE, 2023) That means the majority of students, and likely those most at risk, are invisible in the data. (Sarraf and Jony, 2026). A snapshot taken once or twice a year cannot reveal how a student's wellbeing is changing in real time. (Wright, 2023)
- **Transactional data, not meaningful insight.** Most institutional systems track utilization - counseling appointments attended, workshops registered for, emails opened. This tells institutions what students did, not how they are doing. The nuanced, longitudinal data that would actually enable targeted support, including mood patterns, goal progress, daily coping behaviors, the texture of how students experience their own wellbeing, is almost entirely absent from institutional systems.
- **Low adoption of existing tools.** When the value proposition of a student tool is primarily to the institution rather than the student, adoption suffers and, with it, the quality of data the institution receives (Dubey, Pushkar, and Sahu, 2021).

The path to better data runs directly through better engagement. When students voluntarily use a wellbeing platform multiple times per week - because it genuinely helps them and because they enjoy it - institutions gain access to nuanced, privacy-protected insights that no survey can replicate. Mood patterns, resource utilization, life goals, habit formation, engagement signals: this is the data that enables timely, targeted support. And it only becomes available when students trust the platform enough to use it honestly and consistently (Bautista, 2023). Across successful wellness programs, the pattern is consistent: tools designed for student value first produce better institutional outcomes.

5. Design Principles: Human Augmentation, Not Replacement

The institutions that navigate the AI moment well to improve student wellbeing will be guided by a clear set of design principles. These are not technical specifications, they are clear commitments about what the technology is for and what it is not for.

a) AI Facilitates Human Connection, It Doesn't Replace It

The most important thing AI can do in student wellbeing is get out of the way at the right moment. Effective wellbeing technology identifies students who need human support and connects them to counselors, advisors, and peers who can provide the depth of care and connection that no technology can replicate. Technology augments professional capacity - it expands reach, improves timing, and reduces friction - but it never substitutes for genuine human connection.

b) Digital Tools Support Human Habits, They Don't Replace Them

Mindfulness, physical activity, self-care, social connection, and joy are not features of an app. They are dimensions of human flourishing that have been central to wellbeing across every culture and era. No technology can replace them, but human-centered AI can help students build and deepen these practices in their own lives. The goal is not to make the platform the source of wellbeing, but to make it a supportive foundation for human habits and positive actions. Technology should make students more capable of thriving offline, not less.

c) Technology Should Guide Students Toward Life, Not More Screen Time

Social media's most detrimental quality is its optimization for engagement as an end in itself - more time on platform, more clicks, more sessions. Wellbeing AI must reject this model entirely. Effective technology in this space measures success not by time-on-app, but by the quality of students' lives off it: stronger relationships, healthier habits, greater resilience, and better academic outcomes. The platform that helps a student connect with a peer support group, develop a sleep routine, or find their way to a counselor has done its job - whether or not the student returns to the app tomorrow.

d) Student Agency Over Data Is a Design Principle, Not a Feature

Privacy and control are not compliance checkboxes - they are foundational to whether wellbeing AI works at all. Students must understand what data is collected, retain meaningful control over what they share and with whom, and trust that their wellbeing information is used exclusively to help them. Institutions receive aggregated, anonymized insights that inform programming and resource allocation - never individual surveillance data. This is not just an ethical requirement; it is a practical one. Without trust, there is no engagement. Without engagement, there is no data. Without data, outcomes suffer.

Conclusion

Higher education faces two simultaneous challenges: an intensifying student mental health crisis and a rapidly accelerating AI landscape that carries both tremendous promise and significant risk. The institutions that navigate this moment well will not be those that deploy AI most aggressively. They will be those that deploy it most thoughtfully, with a clear-eyed understanding of what AI can and cannot do for human beings who are struggling.

Social media offered a cautionary precedent. Technology designed without regard for human cognitive limits and genuine human needs created measurable harm, even when the intentions behind it were benign. Wellbeing AI in higher education must learn from that failure. It must be designed around how students actually seek support, build habits, and form connections, earning their trust through genuine value before asking anything of them in return.

The good news is that this approach works. When students engage authentically with wellbeing technology because it genuinely helps them, they build healthy real-world habits and gain access to all of their school's resources. And schools gain the deep, actionable data they need to allocate resources and support students more effectively. Human-centered design is not a constraint on what AI can achieve in student wellbeing; it is the condition that makes achievement possible, driving human flourishing and institutional effectiveness.

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