



Artificial Intelligence for Education: The Role of Inner Skills

Silvio De Magistris¹, Loretta Latronico², Piero Poccianti³, Giulia Magnolia⁴, Anna Júlia Éliás⁵, Silvia Guetta¹

¹University of Florence, Italy

²Independent Researcher, Italy

³Associazione Italiana per l'Intelligenza Artificiale, Italy

⁴University of Pisa, Italy

⁵University of Semmelweis, Hungary

Abstract

Artificial Intelligence (AI) is rapidly reshaping teaching practices and learning processes. While offering unprecedented opportunities for personalized innovation, AI poses new risks to cognitive development, critical thinking, and the overall well-being. Drawing on insights from previous digital revolutions (e.g. smartphone and social media), this paper argues that the future of education demands combining technical AI literacy with the development of inner skills, such as presence, awareness, critical reflection, and ethical responsibility. Building on successive European university initiatives (StudentWell, AI4Well, and AI4WellEdu funded by EUniWell), this research presents a transdisciplinary educational approach aligned with the Inner Development Goals (IDGs) framework. The paper introduces the Well-being-oriented AI Literacy Framework, an experiential paradigm where technical competence and inner development are mutually reinforcing. Preliminary findings from Mindfulness-based Focus Groups involving students and educators highlight that cultivating internal human capacities is not an optional addition, but an essential foundation to ensure that AI enhances, rather than diminishes, human development and flourishing.

Keywords: AI in education; AI literacy; Well-being in education; Inner skills; Digital teaching and learning; Responsible and mindful AI adoption.

1 Introduction

Written language has always been one of the most transformative innovations in human history, shifting how knowledge is preserved and transmitted across space and time. Yet, what we now consider an indispensable foundation of culture was initially met with philosophical scepticism. Socrates, for instance, left no written records, viewing philosophy as a living practice grounded in spoken dialogue. In his view, writing carried structural risks: it was inherently static and unable to clarify itself when questioned, it risked weakening human memory by shifting reliance to an external medium, and it risked creating an illusion of knowledge, where the accumulation of information is mistaken for genuine understanding. As writing evolved through paradigm shifts, from the printing press to the web and, ultimately, to AI, the core of the Socratic warning remains profoundly relevant. Every cognitive tool must be approached critically, balancing its clear opportunities against its structural risks. The challenge is not to reject innovation, but to govern it responsibly. Today, we face an unprecedented technological wave: first with smartphones and social networks, and now with AI. While mobile devices and social platforms facilitated real-time connection and instant access to information, their pervasive use among younger generations has frequently replaced essential developmental activities like free play and direct social interaction. Extensive literature now links this digital saturation to an increase in anxiety, depression, and socio-emotional fragility among Generation Z, highlighting how technological tools can fundamentally reshape human cognitive and psychological development [1]. Today, the rapid rise of AI represents a new and powerful challenge that calls for careful consideration, particularly with regard to how and when it should be integrated into the educational process. It is imperative to understand and mitigate the possible risks, such as critical thinking erosion and cognitive dependency, while actively guiding its development toward its beneficial potential. To address this challenge, the *AI4WellEdu* project analyzes the integration of AI within the educational sector from a transdisciplinary perspective. Building on the cumulative experiences of the *StudentWell* (Student Well-being) [2, p. 150-177], and *AI4Well* (Artificial Intelligence Ethics for Well-being) [2] projects, all funded within the initiative of the *EUniWell* (European University for Well-being) alliance this project proposes a *Well-being-oriented AI Literacy Framework*. Aligned with the *IDGs framework* [3], this approach integrates technical AI training with the structured cultivation of



inner skills (e.g., awareness, deep listening, critical reflection). The *AI4WellEdu* framework argues that inner skills is not an optional extra, but an essential foundation to ensure that AI enhances, rather than diminishes, human development and intellectual autonomy. The paper is structured as follows: Section 2 introduces the concept of inner skills, while Section 3 presents the *StudentWell* project and its main findings. Sections 4 and 5 address the challenges posed by AI to well-being and education, presenting the *AI4Well* and *AI4WellEdu* projects. Specifically, Section 5 analyses systemic risks within the education sector and outlines concrete strategies for adopting AI in a way that promotes human development rather than inhibiting it. Finally, Section 6 presents the main conclusions drawn from this first phase of the *AI4WellEdu* project's research.

2 Inner Skills

Inner Skills refer to the psychological, emotional, and cognitive capacities that enable individuals to manage their internal complexity in order to act efficiently and ethically in the world, while fostering well-being for themselves and others. Within this paradigm, personal transformation is the fundamental prerequisite for collective change: the maturation of internal competencies naturally manifests as responsible external action. Rather than optional extras, these skills represent the human foundation necessary to navigate global changes, a perspective strongly reinforced by the *2023 UNESCO Recommendation*, which advocates for cultivating inner development to foster behaviors, communication, and relationships based on openness, inclusion, and reciprocity. This process requires “*returning to one's home: listening deeply to the body, emotions, and complexity. This process allows one to embrace personal diversity, conflict, and suffering, reflecting the challenges of the external world. Such inner care naturally extends to the outer world, fostering relationships based on interconnectedness*” [4, p. 61]. In order to put this approach into practice, the *IDG Framework* [5] offers a multidisciplinary model linking inner change growth with global change. Developed in alignment with the *UN Sustainable Development Goals* (SDGs), the *IDG Framework* recognizes that systemic, macroeconomic change requires individual psychological evolution. The framework is articulated through 25 core skills organized into five macro-dimensions: *Being* (e.g., self-awareness, presence), *Thinking* (e.g., critical thinking, systems thinking), *Relating* (e.g., Connectedness, Empathy and Compassion), *Collaborating* (e.g., Relationship-Building, Inclusive Mindset and Intercultural Competence), and *Acting* (e.g., Courage, Hope and Optimism).

3 StudentWell Project: Inner Skills and Mindfulness

StudentWell (Supporting and measuring student well-being through cross-university interventions) aimed to enhance student well-being by addressing stress, anxiety, and mental health challenges while fostering inner skills. The project has implemented initiatives focused on well-being at universities and has launched a pilot approach to define and test the so-called *Well-being Working Methodology* [2, p. 153]. Specifically, *StudentWell* demonstrated that the mindfulness-based protocol, developed and tested at the University of Florence, shows that a path based on awareness is capable of developing nearly all the inner competencies included in the *IDG Framework*, and an improvement in participants' well-being, measured via the Well-being Numerical Rating Scales (WB-NRSs) [6].

3.1 The 7-week Mindfulness-based Protocol

The 7-week Mindfulness-based Protocol [2, p. 156-158] is a secular intervention rooted in the mindfulness teachings of Zen Master Thich Nhat Hanh [7]. The protocol is designed to enhance participants' psychological resilience and well-being through an experiential and transformative curriculum. By integrating meditation, physical relaxation, and deep listening with practices from bio-natural disciplines, the program operates on the principle that cultivating present-moment awareness is a fundamental prerequisite for transforming one's inner state. The intervention consists of seven weekly sessions, each lasting 90 minutes, and is systematically divided into two developmental phases that bridge somatic awareness with behavioral transformation: *Phase 1: Inhabiting the Body (Weeks 1–3)* - Focuses on shifting from mental activity to bodily awareness through breathing, grounding, and posture correction. *Phase 2: Inner Transformation and Action (Weeks 4–7)* - Aims to cultivate advanced meta-competencies, such as concentration, deep listening, and emotional regulation, to face academic, professional, and personal daily challenges. Each session follows a standardized, reproducible pedagogical flow alternating an initial presentation, body exercises, deep relaxation, a brief impulse, contemplative insights, and reflective sharing in groups designed to leverage collective intelligence.



StudentWell demonstrated that this structured, awareness-based path is capable of developing nearly all the inner skills included in the *IDGs Framework*, while simultaneously generating a measurable improvement in participants' well-being.

3.2 Results

To evaluate the pedagogical efficacy of the training, qualitative 30-minute interviews with the teaching staff were paired with structured questionnaires mapping the *IDG framework* [2, p. 172-177]. The qualitative data underscored a positive transformation in both individual well-being and collective classroom dynamics. Teachers have noticed a marked increase in engagement and concentration; as the sessions progressed, external distractions have gradually disappeared. There has been no use of mobile phones at any point. This shift directly enhanced students' concentration, intuition, and emotional awareness. Furthermore, the structured protocol fostered a culture of reflective inquiry and deep listening, which significantly lowered academic anxiety, reinforced group solidarity, and promoted prosocial behaviors such as empathy, ethical conduct, and collaboration. Findings also indicate a generalized increase in well-being scores among all participants (Fig. 1).

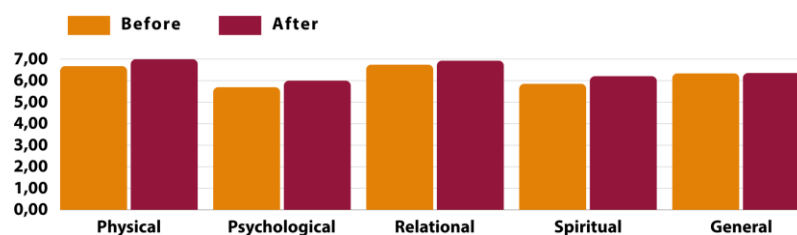


Fig. 1. The impact on well-being measured after the 7-week *Mindfulness-based Protocol* (WB-NRS scale).

Although the limited sample size ($n = 14$) of this pilot study precludes broader generalization, the data demonstrates that the WB-NRS successfully captured fluctuations in well-being within a small cohort. Future research involving larger sample sizes is required to validate and expand upon these preliminary pilot results.

4 AI4Well Project: Inner Skills and Artificial Intelligence

AI4Well (Artificial Intelligence Ethics for Well-being) [2] builds on the PhD thesis "*Artificial Intelligence Ethics for Well-being based on the Sustainable Development Goals*" [8], and examines how ethical principles can be implemented across the entire AI ecosystem, from design to adoption. By integrating psychology, anthropology, computer science, communication, education, well-being, and mindfulness, the project highlights that responsible AI requires more than regulatory compliance; it depends on cultivating the inner skills needed to act ethically in technologically mediated environments. Grounded in the *IDGs framework*, *AI4Well* positions AI ethics within a broader vision of human flourishing and ecological responsibility, proposing a model for universities and policy actors to navigate technological disruption. To translate these theoretical principles into practice, the project implemented a dual approach combining action-research methodologies and educational pilots: 1) *Mindfulness-based Focus Groups* - A series of focus groups was conducted to explore stakeholders' perceptions of AI. Structurally, these sessions paired introductory technical insights with short mindfulness practices and silent contemplation key themes, creating a reflective space that stimulated deep collective sharing and dialogue among participants [2, p. 198-199]. 2) *The Unlock the Potential of AI for Well-being Workshops* - This pilot training programme was delivered in four fully online workshops to test scalable educational models. Rather than focusing exclusively on technical AI literacy, the workshops integrated technical modules with inner development practices. The curriculum systematically guided participants through sequential phases: establishing presence and somatic grounding, mapping digital well-being through self-reflection, analyzing the geopolitical and environmental impacts of AI, and engaging in transdisciplinary co-creation [2, p. 199-204]. By blending technical competence with inner skills, these training courses demonstrated that promoting a conscious and responsible use of AI is not merely a matter of institutional compliance, but of cultivating the human capacities required to guide technology toward sustainable and well-being-oriented outcomes.

4.1 Results



Evidence emerging from the *AI4Well* workshops and mindfulness-based focus groups shows that navigating the integration of AI into education requires a profound pedagogical shift, centered on a conscious-oriented approach rather than passive adoption [2, p. 206-213]. A key finding of the research is that traditional technical training alone is wholly insufficient to handle the multi-faceted cognitive and ethical complexities of an AI-driven environment. Without structured oversight, over-reliance on AI-powered generative tools risks eroding students' critical thinking, analytical depth, and capacity for original insight. Consequently, the project's main result highlights the urgent necessity of redefining AI literacy through a holistic triad that blends technical proficiency, ethical awareness, and inner skills. Grounded in the logic of the *IDG framework*, the findings advocate for making inner skills training an essential component of educational curricula, positioning these human competencies as critical cognitive anchors. Much like the systemic challenges faced by the *SDGs*, AI adoption currently suffers from a significant gap between theoretical ethical frameworks and concrete, day-to-day action. The *AI4Well* results confirm that cultivating an alliance between technical competence and inner development is an effective strategy to bridge this gap, ensuring that technological adoption is actively guided toward human flourishing, intellectual autonomy, and responsible digital citizenship.

5 AI4WellEdu Project: Artificial Intelligence in Education

AI4WellEdu (Artificial Intelligence for Well-being in Education) builds on the foundations of *AI4Well* and seeks to tackle the pressing challenges of AI for well-being in educational settings. Because AI is currently having a highly disruptive impact on education, it is imperative to closely examine its long-term effects on human development and well-being [9][10][11]. Although the impact of digital technologies on education and well-being has been extensively investigated in recent years [1][12], with studies highlighting both the potential benefits and the structural risks associated with AI [13][14], there remains a widely acknowledged and critical call for further research to address these emerging issues [15][16]. While many studies underscore AI's potential contribution to well-being and human development [17], its practical application, particularly within educational environments, still faces significant challenges that must be addressed. Recently, the *EU AI Act* [18] has sought to address these challenges through regulatory measures; however, top-down legislation alone is insufficient. It is equally necessary to cultivate the internal human capacities and inner skills required to design and adopt AI responsibly [2]. *AI4WellEdu* addresses these specific educational challenges by designing a structured training program that develops inner skills alongside targeted technical training on AI. This approach is firmly rooted in the *Well-being Literacy Framework*, which was designed and piloted in *AI4Well* [2, p 199-204]. *AI4WellEdu* aims to further develop and test this methodology with a larger and more diverse group of participants. The objective is to deliver three sessions consisting of four workshops each, from which additional feedback will be gathered for both qualitative and quantitative analyses. Furthermore, while the original *AI4Well* workshops "Unlock the Potential of Artificial Intelligence for Well-being" were delivered exclusively online, *AI4WellEdu* plans to conduct at least one in-person session over three consecutive days. Implementing these two distinct delivery modes will allow for a rigorous comparative analysis of the results obtained. As in *AI4Well*, a multidisciplinary expert group (comprising specialists in AI, ethics, mindfulness, pedagogy, psychology, and neuroscience) will guide the definition and structuring of the course content based on the core concept of well-being. To further support the content design and the pedagogical methodology adopted in *AI4WellEdu*, at least five series of focus groups will be conducted. These sessions will adopt a transdisciplinary approach involving experts from a wide variety of disciplines. Notably, several focus groups will be dedicated exclusively to students to capture their direct perspectives and experiences, a contribution we consider fundamental to this initiative. The expert committee will also be actively involved in the subsequent data analysis phase. The *AI4WellEdu* project launched in mid-December 2025. To date, the first expert group meetings and initial focus group sessions have taken place. This paper presents and analyses the empirical findings that have emerged from these initial stages of the project.

5.1 Mindfulness-Based Focus Groups: Views of Students, Educators, Researchers, and Experts

Building on the methodology established in *AI4Well*, a series of *Mindfulness-based Focus Groups* was conducted within *AI4WellEdu* to deeply explore the psychological, cognitive, and systemic impacts of generative AI in education. Currently, three focus groups have been completed using identical structure and timing parameters. These sessions involved a total of nine researchers, experts, and lecturers from



various disciplines, including psychology, neuroscience, mindfulness, well-being, and AI, alongside five students from different degree courses, such as psychology, communication, and economics. By embedding short contemplative practices and deep listening within a multidisciplinary group setting, the sessions encouraged participants to reveal their authentic emotions, fears, and daily habits regarding AI. The thematic analysis of the qualitative data yielded a complex map of emotional, cognitive, relational, and structural dynamics, which can be synthesized into five key themes: 1) *The Emotional-Relational Dimension and Students' Needs* - In an environment marked by academic pressure and structural uncertainty, students frequently turn to generative AI not just as a study aid, but as an emotional buffer, virtual companion, or pseudo-therapist. While this highlights unfulfilled listening needs within traditional higher education, it raises critical concerns regarding emotional dependency, technology anthropomorphization, and exposure to harmful or inaccurate outputs without professional guidance. In this regard, students highlighted that if AI is to be explored as a tool for emotional regulation during stressful exam sessions, its biases and risks must be strictly evaluated and explained by certified psychotherapists. 2) *AI, Learning, and Critical Thinking* - A prominent tension emerged regarding cognitive automation (e.g., text generation, summarizing). The data revealed deep anxiety that bypassing the productive effort of independent study might progressively erode memory, analytical depth, and intellectual autonomy. While participants recognized AI's potential for self-assessment and content exploration, they stressed that it must enhance human faculties rather than substitute for mental effort. 3) *Acceleration, Productivity, and Time Management* - AI is perceived as an intense driver of systemic acceleration. Rather than freeing up quality time, its capacity to maximize efficiency often traps students, educators, and professionals alike in a vicious cycle of performance pressure and constant availability, where the machine dictates unsustainable academic rhythms. Reclaiming spaces for pauses, intentional disconnection, and inner listening is identified as an urgent prerequisite to maintaining conscious control over technology. 4) *Communities of Dialogue and Educational Relationships* - A significant barrier identified by students is the tendency to use AI covertly due to a perceived climate of institutional judgment or mistrust. This finding underscores the vital need to foster safe, non-judgmental spaces, interdisciplinary seminars, and shared training pathways where students and teachers can openly analyze the ethical and relational implications of digital tools, safeguarding empathic listening from digital impoverishment. 5) *Critical Literacy, Ethics, and AI-Augmented Education* - Participants expressed a strong demand for an interdisciplinary AI literacy curriculum that extends far beyond mere technical aspects. This framework must integrate psychological, neuroscientific, and ethical dimensions, including a critical analysis of the corporate economic interests driving AI development and the risks of a widening digital divide. Ultimately, both cohorts recognized that the transition is not merely technical, but represents an actual anthropological and neural transformation that demands immediate, aware management and deep ethical questioning. Finally, this evidence converges toward the structural proposal of a conscious, *AI-augmented education* that subordinates technological productivity to the preservation of human well-being, inner competencies, and intellectual freedom. To provide an overview of how these dimensions manifest differently across university cohorts, the specific psychological triggers, operational habits, and perceived risks are contrasted in the comparative matrix in Table 1.

5.2 Results

The preliminary findings from these focus groups indicate that the adoption of AI in education is perceived not merely as a technical matter, but as a phenomenon that encompasses emotional, cognitive, relational, and ethical dimensions. On the one hand, particularly among students, AI appears as a tool capable of offering immediate support in studying and emotional regulation; on the other hand, there emerges a risk of cognitive and emotional dependency, atrophy of critical thinking, and an excessive delegation of one's own abilities, with potential repercussions on the development of autonomy and trust in human skills. This dynamic often leads students to a form of cognitive avoidance, summarized by the provocative question: "Why bother putting in the effort?". Concurrently, educators and researchers emphasize the necessity of maintaining a *human-in-the-loop* approach, in which AI remains a support rather than a substitute for effort, reflection, and personal processing. For professionals and experts alike, managing the integration of AI requires a strategic investment of time to foster conscious adaptation, effectively guiding AI rather than being driven by it. Academically, institutions must avoid building rigid barriers and ignoring AI's systemic impact on learning communities. From this perspective, participants converge on the importance of promoting spaces for dialogue, critical literacy, and multidisciplinary training, integrating inner skills, ethical awareness, and self-regulation capacities, so as to guide a truly mindful, relational, and well-being-centered use of AI in education. The comparison between the data emerging from the focus groups of the two participant groups highlights



areas of strong convergence, as well as significant interpretative and emotional discrepancies regarding the introduction of AI in educational processes. Table 1 provides a comparative summary of the key dimensions of this phenomenon.

Dimension of Analysis	Evidence in the Student Group	Evidence in the Group of Educators, Researchers, and Experts
Prevalent Emotional Experience	Academic performance anxiety; search for safety and a protective relational connection.	Operational frustration; anxiety stemming from work overload and pressure for immediate reactivity.
Relationship with the Machine	Anthropomorphization of the tool; utilization of AI as a therapist or an amicable surrogate.	Necessity of maintaining a <i>Human-in-the-Loop</i> approach and safeguarding a mindful presence.
Perception of Effort	Tendency towards cognitive avoidance as a strategy to cope with exam pressure.	Recognition of effort as an irreplaceable neural exercise essential for consolidating logic.
Time Management	Utilization aimed at acceleration and immediate synthesis to demonstrate the acquisition of knowledge.	"Time trap": the more time we save, the more time we remain connected, at the expense of relationships and self-care.
Academic Obstacles	Furtive and hidden use due to the fear of sanctions and moralizing judgment from educators.	Structural difficulty of universities in keeping pace with the velocity of the technological transition.
Proposed Solutions	Creation of sharing groups and horizontal seminars to explore the use of AI in educational contexts.	Transdisciplinary curriculum reform; technical literacy integrated with inner skills.

Table 1. Comparative Summary of Perspectives Emerged from the Two Groups.

6 Conclusion

This paper explores a comprehensive, multi-year research programme that started with the *StudentWell* project (2022–2024) and is now being advanced through the ongoing *AI4WellEdu* project. The findings consistently demonstrate that mindfulness-based training effectively cultivates essential inner skills, proving that enhancing internal competencies directly nourishes personal well-being, which subsequently translates into broader societal and academic benefits. Within this cumulative framework, *AI4Well* and *AI4WellEdu* have successfully implemented the *Well-being-Oriented Literacy Framework* applied to AI, presenting an experiential pedagogical methodology that effectively integrates technical expertise with inner development. A key contribution of this research is the mapping of the convergent yet contrasting socio-emotional dynamics among university cohorts. While students frequently turn to generative AI as an emotional refuge to alleviate academic isolation and performance anxiety, academics, researchers, and professionals face extreme systemic pressures to accelerate workflows, navigating professional over-saturation and cognitive overload. For both groups, strengthening an *inner compass* through mindful presence and self-listening serves as an indispensable barrier against cognitive dependency, technological fragmentation, and alienation. Integrating technical literacy with robust inner skills represents one efficient direction for ensuring that the adoption of AI contributes to genuine human well-being. To tackle these challenges in higher education in a practical way, *AI4WellEdu* proposes the following circular, experiential and scalable training framework, structured in two phases, designed to develop both technical and inner skills: 1) *Orientation and Values* - This phase leverages peer-to-peer and intergenerational dialogues between faculty and students to collectively redefine concepts of productivity, creativity, and learning, identifying which uniquely human faculties must be actively preserved. This aligns with the students' demand for a stadal, circular, and participatory approach to seminars on AI use in educational contexts. 2) *Technical and Transdisciplinary Integration*. This phase deploys a co-designed curriculum involving computer scientists, psychologists, pedagogists, and neuroscientists to provide the scientific and psychophysical frameworks needed to safely integrate AI tools into daily study and work routines. Finally, *AI4WellEdu* highlights that the challenges posed by generative AI cannot be solved through restrictive regulations or rigid institutional compliance. Instead, universities must actively promote a paradigm of *AI-augmented education*. By creating structured spaces for pauses, deep listening, and continuous dialogue, the academic community can leverage these powerful technologies to maximize scientific efficiency and creativity while firmly safeguarding



intellectual autonomy, critical thinking, and mental health. To address the risk of social isolation highlighted by the participants, these training programmes must actively promote non-digital interactions and rebuild fundamental interpersonal skills through collaborative teamwork and collective problem-solving.

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