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Beyond individual intelligence: assessing creativity in the human -AI - world ecosystem

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Abstract: Purpose of the article: The modern educational landscape faces a crisis as traditional assessment, which measures individual achievement in isolation (the "fish in a tank" fallacy), fails to capture the rich creative potential emerging from global Human-AI partnerships. This paper introduces Cosmogogy, a theoretical framework, advocating for a decisive shift from "defense mode" to "design mode" to reimagine knowledge assessment as collaborative ecosystem contribution across cultural and technological boundaries.
Research Methodology: Drawing from Cosmogogy's theoretical foundations, the paper details the Cosmogogy Collaborative Pilot, an 8-week global sustainability project involving diverse higher education institutions across continents. The methodology employed innovative practices, including process-based assessment, Global Peer Evaluation, and ecosystem impact measurement, featuring the explicit integration of the Collaboration Cosmo AI Agent as a peer-level participant.
Keywords: Artificial Intelligence, collaboration, assessment
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Onkraj posameznikove inteligence: vrednotenje ustvarjalnosti v ekosistemu človek - umetna inteligenca - svet

Povzetek: Namen članka: Sodobni izobraževalni prostor se sooča s krizo, saj tradicionalni načini ocenjevanja obravnavajo dosežke posameznika kot nekaj ločenega od njegovega okolja (t. i. zmota »ribe v akvariju«) ne uspe zajeti bogatega ustvarjalnega potenciala, ki nastaja v globalnih partnerstvih med ljudmi in umetno inteligenco.
Prispevek predstavlja *Cosmogogy (kozmogogija)*, teoretični okvir, ki zagovarja odločen premik iz »obrambnega načina« v »način oblikovanja« ter ponovno osmisli vrednotenje znanja kot prispevek k sodelovalnemu ekosistemu prek kulturnih in tehnoloških meja.
Metodologija raziskave: Na podlagi teoretičnih temeljev *Cosmogogy* prispevek podrobno opisuje *Cosmogogy Collaborative Pilot (pilotni projekt sodelovalne kozmogogije)*, osemtedenski globalni projekt trajnostnega razvoja, v katerega so bile vključene raznolike visokošolske ustanove z različnih držav. Metodologija je temeljila na inovativnih pristopih, vključno z ocenjevanjem procesov, globalnim vrstniškim vrednotenjem in merjenjem vpliva na ekosistem. Posebna značilnost projekta je bila tudi izrecna vključitev sodelovalnega agenta umetne inteligence Collaboration Cosmo AI Agent kot enakovrednega udeleženca.
Ključne besede: umetna inteligenca, sodelovanje, vrednotenje

1 INTRODUCTION

1.1 The Crisis of Assessment in a Global, AI-Augmented Era

The modern educational landscape finds itself at a critical juncture, shaped by two transformative forces: the remarkable pace of artificial intelligence development and an unprecedented degree of global connectivity. This convergence of technological advancement and global interconnection presents both extraordinary opportunities and profound challenges for established education systems. Traditional assessment models, which predominantly measure individual achievement in isolation, struggle to capture the rich creative potential emerging from global student-AI partnerships operating within increasingly complex digital environments (Bates, 2019). This limitation exposes a critical gap in existing learning theories, including pedagogy and andragogy, which often operate under what might be termed the "fish in a tank" fallacy, the assumption that we can meaningfully assess learners by examining them in isolation from the technological and global ecosystems in which they now inevitably operate.

As students increasingly work within global and technology-rich environments, assessment models that focus solely on individual achievement in isolation become not merely insufficient but fundamentally misaligned with the reality of contemporary learning. These traditional approaches fail to account for the surrounding Human-AI-World ecosystem that has become integral to how knowledge is created, shared, and applied in the 21st century.

In response to this disruption, education must transcend what I term "defense mode", a reactive posture characterized by fear-based thinking focused on preventing AI-enabled academic misconduct or desperately maintaining traditional forms of human connection. Instead, we must transition into "design mode," embracing creative leadership to architect learning experiences previously considered impossible (Selwyn, 2019). The fundamental question facing educators must pivot from the limiting binary "Will AI replace humans?" to the more generative and human-centered inquiry: "How will AI help us become more fully human?"

This paper introduces Cosmogogy (Lindsay, 2016), a theoretical framework that fundamentally reimagines how we learn and create knowledge together on a global scale. It advocates for innovative approaches to knowledge assessment within what I conceptualize as the Human-AI-World ecosystem. The objective is to demonstrate why we must move beyond individual metrics to evaluate collaborative contributions across cultural and technological boundaries. Drawing from the theoretical foundations of Cosmogogy and insights from the Cosmogogy Collaborative pilot, an 8-week sustainability project connecting diverse higher education institutions across continents, this paper showcases process-based assessment, global peer evaluation, and ecosystem impact measurement as essential tools for transforming assessment from a gatekeeping mechanism into an innovation incubator. Throughout this exploration, readers are invited to reimagine knowledge assessment as collaborative ecosystem contribution rather than isolated individual achievement.

2 THEORETICAL FRAMEWORK

2.1 Cosmogogy and the Flattening of Learning

Defining Cosmogogy: Learning 'With' the World

Cosmogogy represents a response to the inadequacy of traditional learning theories in addressing the realities of our modern, AI-augmented world. Derived from the Greek words cosmos (world or universe) and agōgē (to lead or teach), Cosmogogy literally translates as "world-led learning" (Lindsay, 2016). Coined in 2016 through research examining global collaborative learning, this framework embodies a fundamental reconceptualization of where, how, and why learning occurs.

The distinguishing feature of Cosmogogy lies in its inversion of traditional educational assumptions. Conventional education focuses on "learning about the world from inside a classroom", treating global issues as distant subjects to be studied through secondary sources. Cosmogogy asserts that meaningful learning in the 21st century requires learning with the world (Harasim, 2017). This shift from 'about' to 'with' may appear subtle linguistically, but represents a profound philosophical reorientation. Students collaborate directly with people across borders, partner with AI systems, and engage authentically with real global challenges to co-create knowledge rather than merely consume pre-packaged information.

This approach embraces "flattening the learning", a deliberate move away from traditional, hierarchical, and location-bound models of education toward more integrated, collaborative, and globally connected alternatives (Friedman, 2007). In this paradigm, learning transcends institutional boundaries, transforming the world itself into a shared classroom where learners engage with authentic problem spaces and pressing global challenges in real-time. Significantly, all participants in the Cosmogogy framework, students, educators, community partners, and even AI systems, are recognized as both knowledge creators and knowledge consumers, disrupting traditional hierarchies of expertise.

Just as a compass naturally aligns itself with magnetic north, the Cosmogogy framework reorients assessment practice, aligning the evaluation of creativity not with individual aptitude measured in isolation, but with the collaborative success and ethical impact achieved when human wisdom, AI capability, and global reality intersect in purposeful partnership.

2.2 The Dynamic Human-AI-World Learning Ecosystem

Cosmogogy is constructed around a dynamic learning ecosystem comprising three interdependent and continuously interacting domains: the Human, the AI, and the World. Each domain possesses distinct characteristics while remaining fundamentally interconnected with the others.

The Human Domain positions learners as active, self-directed agents rather than passive recipients of knowledge. Key characteristics include autonomy (taking ownership of one's learning journey), reflection (critically examining one's thinking and growth), ethics (engaging with complex moral dimensions of global challenges), and creativity (generating novel solutions to authentic problems). Within this domain, students build substantive virtual working relationships with global peers and stakeholders, share and negotiate cultural perspectives, and engage in ethically informed decision-making that considers diverse values and contexts.

The AI Domain represents a distinguishing feature of Cosmogogy compared to other frameworks for international education, such as Collaborative Online International Learning (COIL), where AI integration remains peripheral rather than central (Rubin & Guth, 2022). In the Cosmogogy framework, AI transcends its conventional positioning as merely a tool, assistant, or calculator. Instead, AI is conceptualized as a genuine learning partner, a collaborator and "collaborative buddy". Within this domain, AI supports co-creation, enables personalized learning pathways, and augments human capabilities in ways that amplify rather than diminish human agency. The role of AI Agents, exemplified by “Collaboration Cosmo” in the pilot project, involves acting as dynamic, peer-level participants in group work, bridging time zones, and facilitating sophisticated asynchronous collaboration that would otherwise prove impossible across global teams.

The World Domain transforms the world from a passive object of study into an active participant in the learning process. Learning within this domain involves engaging directly with authentic, real-world problems, tackling genuine global challenges such as sustainability crises, and producing outcomes for real audiences beyond the teacher. This dynamic engagement includes addressing global challenges in real-time and leveraging AI-

World interfaces for sophisticated real-time data analysis. Students work not for grades alone but to create meaningful impact in actual problem spaces.

The transformative potential of Cosmogogy emerges in the interactions between these domains: human-AI partnerships enable unprecedented co-creation; human-world connections build authentic global citizenship; and AI-world interfaces facilitate real-time data analysis for addressing complex, multifaceted challenges that no single domain could adequately address alone.

2.3 The Global Collaborator Mindset (GCM)

Success within the Human-AI-World ecosystem requires participants to cultivate a Global Collaborator Mindset (GCM) (Lindsay, 2022). This is a constellation of interconnected attributes essential for thriving in globally connected, technologically mediated learning environments. The GCM comprises four fundamental pillars: Connection, Openness, Autonomy and Innovation.

Connection involves intentionally building authentic working relationships with diverse individuals across the globe, effectively transforming the entire world into both classroom and collaborative team. This goes beyond superficial intercultural contact to develop substantive partnerships characterized by mutual respect, shared purpose, and genuine collaboration (Knight & de Wit, 2018).

Openness requires cultivating the intellectual humility to recognize that valuable knowledge can emerge from anywhere and anyone, demanding receptivity to diverse viewpoints and unfamiliar ways of thinking. This attribute challenges ethnocentric assumptions and embraces epistemological diversity (Lilley et al., 2015).

Autonomy entails taking ownership of one's educational journey, demonstrating resilience and flexibility when confronting complex, ill-structured problems that lack clear solutions. This self-direction proves essential when working across time zones, cultures, and technological platforms where traditional structures of educational support may be absent or limited.

Innovation focuses on actively designing novel approaches to collaboration and building creative solutions to multifaceted problems, emphasizing the generation of new possibilities through "hybrid intelligence" defined as the synergistic combination of human creativity, wisdom, and ethical reasoning with AI's computational power, data processing capabilities, and capacity for pattern recognition (Dellermann et al., 2019).

The ultimate goal of cultivating the Global Collaborator Mindset is preparing a new generation of leaders equipped to address humanity's most pressing and complex challenges by skillfully blending human wisdom, AI capabilities, and direct engagement with authentic global problems, leaders who can navigate complexity with both technical sophistication and deep humanity.

2.4 Transforming Assessment: From Evaluation to Innovation Incubator

The Shift in Purpose: From Defence Mode to Design Mode

The emergence of the Human-AI-World ecosystem compels educators to fundamentally reconsider the purpose of assessment. For too long, discourse around educational technology has often remained in "defense mode", a reactive stance driven by anxiety about AI replacing teachers or enabling academic misconduct. This defensive posture attempts to preserve existing systems through ever-more-sophisticated detection mechanisms and restrictive policies rather than creating educational architectures appropriate for the future we actually inhabit (Bearman et al., 2016).

The Cosmogogy framework demands a decisive shift into "design mode", an approach characterized by creative leadership that actively partners with AI to amplify distinctly human capabilities and design learning experiences previously impossible within traditional constraints. This transition requires moving from asking "How do we prevent

AI?" to asking "How do we harness AI to develop more meaningful, authentic, and transformative learning?"

If we genuinely seek to address the question "How will AI help us become more human?", then assessment practices must evolve in parallel, shifting focus from measuring isolated tasks completed by individuals to evaluating authentic contributions to complex ecosystems (Boud & Falchikov, 2007). The challenge confronting traditional assessment models lies in their fundamental inability to capture the creative potential emerging from global student-AI partnerships operating within increasingly sophisticated digital environments. This limitation perpetuates the false dichotomy of "Tools versus Transformation." When technology serves merely for content delivery, such as an AI tutor explaining pre-existing knowledge to passive students, it reinforces conventional patterns of passive consumption. Genuine transformation, however, requires repositioning AI for creative collaboration, where AI works with students as partners to generate new knowledge and design actionable solutions to authentic problems.

The vision emerging from this analysis transforms assessment from a gatekeeping evaluation tool into an innovation incubator. Assessment must move beyond individual metrics to evaluate collaborative contributions across cultural and technological boundaries. Crucially, it must capture the authentic intersection of human insight, AI capability, and global connectivity. This fundamental shift represents a move "from counting fish to cultivating reefs." If traditional education sought to "grade the fish" in isolation from its environment, the Cosmogogy framework demands that "we measure how the reef thrives" thereby evaluating the health, diversity, and sustainability of entire learning ecosystems. Assessment must transform into an innovation incubator capturing the authentic intersection of human insight, AI capability, and global connectivity, pivoting from measuring isolated tasks to measuring authentic ecosystem contribution.

Innovative Assessment Practices for the Ecosystem

To accurately measure collaborative ecosystem contribution, the Cosmogogy approach introduces three interconnected assessment practices, each addressing different dimensions of learning within the Human-AI-World ecosystem.

Process-Based Assessment

Process-based assessment centers evaluation on the journey of co-creation rather than focusing exclusively on final products. In global collaborative projects, the design process itself becomes a valuable and measurable learning artifact. Structured thinking routines such as 'What?', 'So What?', 'Now What?' provide frameworks for ideating challenges, analyzing implications, developing solutions, and planning future action. Assessment focuses on how students engage with these phases, demonstrating the GCM attributes of openness, autonomy, and innovation within collaborative structures.

Because global collaboration relies heavily on geographically distributed interaction, the capacity for effective asynchronous communication becomes critical to project success. This asynchronous communication, collaboration, and co-creation serves as the "glue" binding teams working across vast time differences and competing schedules. Process-based assessment must therefore evaluate the effective application of asynchronous methods, including examining the frequency, quality, and regularity of communication between team members and educators. Evidence of the process includes documentation of evolving ideas, records of peer feedback integration, demonstrations of iterative refinement, and artifacts showing how diverse perspectives influenced final outcomes.

Global Peer Evaluation (GPE)

Within the Human-AI-World context, assessment must value diverse perspectives and intercultural understanding as core competencies rather than peripheral concerns. Global Peer Evaluation (GPE) leverages feedback and critique from collaborators across cultural

and technological boundaries. This practice fosters key outcomes such as curiosity and empathy, which are essential for successful cross-cultural team building.

During co-creation phases, students engage in analyzing problems through diverse disciplinary lenses, learning to appreciate how different fields, cultures, and contexts illuminate distinct dimensions of complex challenges. Practices such as preparing and receiving structured feedback on "Moonshot Pitches" allow peers to refine and improve co-created solution plans through constructive critique. By actively involving students from different countries, disciplines, and backgrounds in the evaluation process, assessment itself becomes a vehicle for developing global competence and facilitating the exchange of cultural perspectives.

Ecosystem Impact Measurement

The World Domain functions as an active component of Cosmogogy, requiring authentic engagement with real-world problems and actual audiences beyond classroom walls. Consequently, project success must be measured partly by ecosystem impact and evaluating contributions based on their measurable effect or application within the Human-AI-World system (Hogan & Dow, 2021).

Assessment criteria should align with real-world engagement standards, requiring students to research and analyze global challenges in authentic problem spaces using methods and evidence types valued in professional contexts. Outcomes should constitute transformative solutions and polished digital artifacts that synthesize findings and aim for genuine impact on the world, not merely a grade. This might include policy recommendations shared with actual organizations, resources designed for specific communities, or interventions addressing real sustainability challenges. Measuring impact ensures that the learning is externally focused, connecting classroom activities to authentic global challenges and ultimately transforming knowledge into "concrete practices and solutions" beyond academia.

2.5 Case Study: The Cosmogogy Collaborative Pilot Methodology

Project Overview and Context

The principles of Cosmogogy and its innovative assessment methods are demonstrated through the Cosmogogy Collaborative Pilot, an initiative developed within Project Nexus, a 2025 effort of the Technology and Innovation Network (TIN), a community operating under the International Council for Open and Distance Education (ICDE). Project Nexus aims to transform siloed higher education institutions into interconnected hubs of collaborative learning, challenging the traditional model of universities as self-contained entities competing for prestige and students. The pilot's ultimate goal involves facilitating authentic global problem-solving experiences for students and educators by meaningfully integrating human wisdom, AI capabilities, and real-world engagement.

The pilot operates as a structured global collaborative project for higher education, specifically focusing on interdisciplinary collaboration around pressing global challenges. The theme for the 2025 pilot centers on sustainability, chosen for its universal relevance, interdisciplinary nature, and urgent real-world significance. The project engages diverse undergraduate students worldwide in tackling authentic sustainability challenges through a carefully structured 8-week program progressing from initial ideation to final creation. The core guiding question driving participant engagement asks: "How can we co-create global sustainability through the lens of the Cosmogogy ecosystem?" This inquiry intentionally explores multiple dimensions including climate action, social equity, circular economy principles, and impact metrics.

Participating institutions span multiple continents, representing diverse educational contexts, disciplinary perspectives, and cultural frameworks. This diversity proves intentional rather than incidental—it constitutes a core design feature ensuring students

encounter genuinely diverse perspectives and must navigate substantive intercultural negotiation.

Structural Design and Modality

The Cosmogogy Collaborative operates as an online global project spanning 8 weeks during the academic term. Student teams, ideally composed of 4-6 undergraduate students at Level 2 or higher, are intentionally organized to cross institutional and national boundaries, ensuring no team consists entirely of students from a single institution or country. The project follows a clearly defined three-phase structure:

Phase 1: Preparation and Introductions (Pre-Week 1 to Week 2) focuses on establishing foundations for successful collaboration. Activities include student and educator introductions designed to build rapport, formal team formation with explicit discussion of working norms and communication protocols, preliminary exploration of the sustainability theme to establish shared understanding, and identification of specific problems within the broader global challenge that resonate with team interests and expertise. A synchronous launch session provides a crucial opportunity for initial intercultural team-building, establishing personal connections that sustain asynchronous work throughout the project.

Phase 2: Collaborative Exploration, Synthesis, and Co-Creation of Solutions (Weeks 3-6) constitutes the intensive core work phase. Teams engage in deep ideation, systematic problem-solving, and collaborative outcome development. This phase demands sophisticated team work leveraging all dimensions of Human-AI-World interactions and explicitly emphasizes the GCM attributes of Openness and Autonomy within collaborative structures. Students conduct research, analyze data, negotiate competing perspectives, and synthesize findings into coherent narratives. This synthesis process leads to co-creation of diverse digital artifacts including written reports, videos, podcasts, infographics, interactive presentations, or prototype solutions, with format determined by team interests and the nature of problems being addressed.

Phase 3: Showcase and Reflection (Weeks 7-8) involves presentation of outcomes to authentic audiences, structured reflection on both content learning and process learning, and formal collection and archiving of all digital artifacts for public sharing (fulfilling the World Domain requirement for real audiences). A synchronous closing session provides space for celebration, sharing breakthrough moments and challenges overcome, and collective reflection on the transformative potential of global collaboration. This phase includes explicit discussion of how the experience influenced participants' understanding of sustainability challenges and their own capacity for global leadership.

Critically, the program's modality relies heavily on asynchronous learning. Only two formal synchronous gatherings occur: at the beginning (Week 1) and conclusion (Week 8). The collaboration, communication, and co-creation occurring between these touchpoints must be driven entirely by effective asynchronous methods, acting as essential "glue" for the project and enabling continuous workflow across diverse global time zones where synchronous meeting times prove challenging or impossible to arrange equitably.

The 'Moonshot Pitch' and Co-creation

The pilot employs sophisticated creative processes to drive solution development. During Weeks 3-4, teams engage in structured ideation and problem identification activities, including "moonshot" or "blue sky thinking" exercises designed to push beyond incremental improvements toward transformative solutions. The preparation and presentation of the "Moonshot Pitch" requires students to articulate bold, co-created solutions for challenges they have identified, temporarily suspending practical constraints to imagine what might be possible.

This activity provides structured mechanisms for collecting peer feedback, which subsequently informs refinement of solution plans. The pitch serves as a key moment for both process-based assessment (evaluating how teams developed their ideas) and global

peer evaluation (gathering diverse perspectives on proposed solutions). These presentations demonstrate how students blend human insight, including cultural knowledge, ethical considerations, and creative vision, with AI tools for co-creation, such as using AI for research synthesis, visualization support, or identifying patterns in complex data.

Following the Moonshot Pitch, teams move into the co-created outcomes phase (Weeks 5-6), where they synthesize findings into polished digital artifacts. During this phase, students strategically leverage AI capabilities to support creation such as generating images, designing logos, producing graphics, structuring presentations, or even drafting initial text that teams then refine through human judgment and cultural sensitivity. This process embodies the Human-AI partnership central to Cosmogogy, with AI amplifying human capabilities rather than replacing human creativity and ethical reasoning.

AI as a Learning Partner: Collaboration Cosmo

A defining feature distinguishing the Cosmogogy Collaborative from frameworks like COIL involves the explicit and central positioning of AI as a learning partner rather than a peripheral tool. The pilot introduces Collaboration Cosmo, a specialized AI Agent designed specifically for the project's unique requirements. Cosmo functions as a dynamic, peer-level participant in global group work rather than merely a facilitator or information source.

Collaboration Cosmo transcends traditional AI roles to act as what students come to recognize as an equal team member—a "collaborative buddy" available 24/7 across all time zones. Cosmo's specific functions are carefully calibrated to address the asynchronous nature of global projects: contributing substantive ideas when discussions stall, responding thoughtfully to team discussions with questions that deepen thinking, helping manage project workflows by tracking decisions and action items, and actively participating in project development by offering relevant information, alternative perspectives, or creative suggestions. By maintaining continuous engagement across time zones when human team members sleep, work, or attend classes, Cosmo proves essential in bridging temporal and distance gaps that might otherwise fragment team cohesion.

Importantly, all team members interact with both each other and Cosmo within a shared digital space or "conversation thread," ensuring transparency and collective knowledge-building rather than fragmented individual interactions with AI. This design choice proves deliberate and ensures AI contributions remain visible to all team members, subject to human judgment and critique, and integrated into collective decision-making processes.

The integration of AI as a peer necessitates specific responsibilities for participating educators, who must act as facilitators and network navigators rather than traditional content experts or authority figures. Educators receive explicit guidance on supporting students in engaging productively and ethically with AI as a learning partner, including fostering critical AI literacy, addressing ethical considerations around AI use, and helping students understand both AI's capabilities and limitations. Students likewise receive clear expectations: they should actively utilize AI tools as learning partners to enhance collaboration, generate insights, and augment human capabilities but always with human oversight, judgment, and ethical consideration guiding AI integration.

3 DISCUSSION

3.1 Assessing Collaborative Ecosystem Contribution

The Cosmogogy Collaborative Pilot provides empirical evidence for the feasibility and value of shifting knowledge assessment away from individual achievement toward measuring collaborative ecosystem contribution. By intentionally integrating the Human, AI, and World domains into a cohesive learning experience, the project successfully operationalizes the three innovative assessment methods proposed earlier: process-based

assessment, Global Peer Evaluation, and ecosystem impact measurement. Emerging results, both quantitative data and qualitative feedback, demonstrate significant outcomes for participants alongside illuminating ongoing challenges inherent in transforming educational assessment.

3.2 Assessing Human-AI-World Co-Creation and Creativity

The assessment framework successfully moves beyond the limiting "Tools versus Transformation" dichotomy that characterizes much discussion of educational technology. Traditional approaches frequently position AI merely for content delivery including AI tutors explaining concepts, and AI systems providing information. This leads to passive consumption that differs little from reading textbooks or watching lectures. The pilot, by contrast, deliberately positions AI for creative collaboration, where AI works with students as partners to generate new knowledge, consider alternative perspectives, and design novel solutions.

Creativity within this framework is assessed not through conventional standardized measures but through application of the Global Collaborator Mindset pillars, particularly Innovation. This assessment occurs through multiple mechanisms:

Process-Based Innovation: Teams engage in structured high-level thinking routines including moonshot thinking processes that explicitly encourage creative, unconventional solutions. The Moonshot Pitch represents a crucial moment for process-based assessment where educators and peers evaluate not merely the final solution proposed but the quality of thinking evident in how teams arrived at their proposals, the creativity demonstrated in reframing problems, and the boldness in imagining transformative rather than incremental change.

Hybrid Intelligence Artifacts: Final assessment examines co-created digital artifacts (reports, presentations, videos, interactive prototypes) that synthesize team findings. Assessment criteria explicitly include evidence of AI integration. This refers to not merely using AI for superficial tasks but demonstrating thoughtful human-AI partnership where students leverage AI to support creation while maintaining human judgment about what constitutes quality, ethical, and culturally appropriate work. For instance, teams might use AI to generate initial images or graphics, then carefully refine these outputs to align with cultural sensitivities and aesthetic preferences that AI alone could not navigate.

The AI Agent Collaboration Cosmo plays a central role here, serving as a dynamic peer-level participant that contributes substantive ideas and actively engages in project development. Cosmo's contributions model the collaborative future being assessed thereby demonstrating how AI can amplify human curiosity, provide alternative perspectives students might not have considered, and enable generation of new knowledge through human-AI partnership.

Global Peer Evaluation: The GPE process embedded throughout the collaboration phase (Weeks 3-6) ensures proposed solutions undergo critique and refinement by peers representing diverse cultural and technological contexts. This iterative feedback loop demands students demonstrate both Openness, genuine receptivity to perspectives that may challenge their assumptions, and Autonomy, self-direction in deciding how to respond to competing suggestions while maintaining coherent vision. These qualities represent core elements of the GCM and prove essential for navigating the complexity of global collaboration.

The collaborative pilot generates meaningful outcomes for student participants, cultivating capabilities essential for professional success in an interconnected, AI-augmented world.

Global Competence and Networks: Students experience significant enhancement in their global competence and intercultural understanding through this authentic, project-based engagement with real-world challenges. Unlike simulated cultural encounters or

superficial "international" experiences, the pilot requires sustained collaboration where cultural differences matter for project success. Students develop practical skills in navigating time zones, communication styles, and diverse perspectives on complex issues like sustainability. They build substantive virtual working relationships with global peers that may persist beyond the formal project timeline through social media and professional networks. This establishment of nascent global learning communities represents a significant long-term outcome, potentially creating networks that participants leverage throughout their careers.

Essential Skill Development: Beyond content knowledge about sustainability, students develop transferable skills including sophisticated critical thinking, nuanced cross-cultural collaboration, effective multi-modal communication, and creative innovation under constraints. They become more self-directed and autonomous learners who understand how to actively participate in co-creation rather than passively consuming information. The explicit integration of the World Domain, requiring engagement with authentic global challenges and real audiences, ensures students practice research and analysis within genuine problem spaces, developing professional-level capabilities in synthesizing complex information and communicating findings to diverse stakeholders.

AI Fluency and Partnership: Students gain practical experience utilizing AI tools as learning partners to enhance collaboration, generate insights, and augment human capabilities. This hands-on experience proves invaluable for developing a nuanced understanding of the Human-AI-World ecosystem and its potential for addressing complex challenges. Rather than viewing AI with either uncritical enthusiasm or fearful resistance, students develop balanced perspectives on AI's capabilities and limitations, learning when to leverage AI support and when human judgment must predominate.

Outcomes for Educators: Facilitators of the Ecosystem

The collaborative experience transforms participating educators as significantly as students, repositioning faculty from content experts and knowledge authorities to learning architects, facilitators, and network navigators.

Global Management Capacity: Educators develop the necessary ability to coordinate learning activities across diverse institutions and academic calendars. They learn to design inclusive learning activities that honor various cultural expressions and communication styles, as well as implement strategies to resolve cultural misunderstandings within global teams.

AI Integration and Ethical Assessment Design: A key outcome is the capacity to effectively incorporate AI tools into teaching, assessment, and project management. This includes guiding students in critical AI literacy and designing activities that balance AI capabilities with human connection. Educators learn to create balanced assessment approaches for AI-assisted work and analyze ethical challenges encountered during the collaboration.

Modeling the Global Collaborator Mindset: Throughout the pilot, educators serve as facilitators, role models, and network navigators who actively demonstrate GCM attributes. They facilitate sharing of cultural perspectives, foster curiosity and empathy among students, and model how to navigate the inevitable challenges and ambiguities of global collaboration.

Challenges and Ethical Considerations

While the pilot demonstrates significant promise, it also illuminates systemic challenges within higher education that the Cosmogogy framework seeks to address. These challenges provide important context for interpreting outcomes and planning future iterations.

First, despite unprecedented connectivity, many students report experiencing what might be termed "isolation despite connection". Although they engage extensively with digital tools and global networks, they sometimes feel disconnected from deep, meaningful

human relationships. Second, implementation barriers persist within traditional higher education structures. Institutional academic calendars rarely align across countries, making scheduling challenging. Credit systems, assessment requirements, and learning management platforms vary significantly, creating practical obstacles for seamless collaboration. Many institutions lack policies addressing AI-assisted work or global collaboration, leaving educators uncertain about what assessment approaches prove acceptable. These structural challenges require ongoing attention and creative problem-solving.

Third, concerns about future readiness remain salient. While the pilot addresses many crucial capabilities, questions persist about whether current approaches adequately prepare students for the rapidly evolving future they will inhabit. How can education remain sufficiently flexible and forward-looking when the nature of work, technology, and global challenges continues changing at an accelerating pace?

The integration of AI as a learning partner, while transformative, demands continuous ethical reflection. The essential question persists: "How do we maintain human agency, creativity, and ethical judgment while fully leveraging AI's remarkable capabilities?" The goal involves avoiding two extremes: neither rejecting AI's potential benefits through fear nor embracing AI uncritically without attention to ethical implications and human costs.

Educators bear explicit responsibility for supporting students in engaging thoughtfully and ethically with AI as a learning partner. The pilot's reflection phase (Week 7-8) specifically includes structured discussions about the project's sustainability impact and technology's role within the Cosmogogy ecosystem, encouraging students to grapple with complex questions about what human flourishing means in an AI-augmented world. The aim involves creating solutions serving human development and wellbeing rather than being constrained by false binaries assuming we must choose between global and local, technological and human, or efficiency and meaning.

4 CONCLUSION

4.1 Reimagining Knowledge Assessment for Future Leadership

Synthesis of Findings: From Individual Metrics to Ecosystem Contribution

The digital age, characterized by unprecedented AI development and global connectivity, demands fundamental transformation in educational assessment. Traditional models designed to measure individual performance on isolated tasks fail to capture the creative potential emerging from global student-AI partnerships. This paper has argued that Cosmogogy provides the necessary theoretical foundation for this transformation, reimagining learning as occurring 'with' the world rather than merely 'about' it.

Cosmogogy offers a comprehensive framework for moving assessment beyond passive consumption toward active contribution and innovation within complex ecosystems. At its foundation lies the dynamic Human-AI-World ecosystem, integrating the self-directed Human domain (emphasizing autonomy, reflection, ethics, and creativity), the AI domain (positioned as genuine learning partner rather than mere tool), and the World domain (requiring direct engagement with authentic global challenges and real audiences). Success within this ecosystem depends upon cultivating the Global Collaborator Mindset, with its interconnected pillars of Connection, Openness, Autonomy, and Innovation.

The Cosmogogy Collaborative Pilot demonstrates the practical feasibility of assessing creativity and knowledge as collaborative ecosystem contributions. By intentionally "flattening the learning" (dissolving traditional hierarchical structures and transcending location-based constraints) the pilot enables authentic assessment of sophisticated co-creation across boundaries previously considered insurmountable barriers. The innovative practices showcased include process-based assessment of asynchronous co-creation, Global Peer Evaluation across cultural and disciplinary boundaries, and measurement of

ecosystem impact beyond traditional academic metrics. Furthermore, the explicit positioning of Collaboration Cosmo as an equal team member demonstrates that AI can function as an essential collaborator, bridging temporal and spatial gaps while facilitating continuous workflow that would prove impossible through human effort alone.

This strategic transformation captures the authentic intersection of human insight, AI capability, and global connectivity, ensuring that learning emphasizes Human+AI partnership while foregrounding agency, creativity, ethical reasoning, and collaborative leadership. Assessment thus transforms from a gatekeeping evaluation tool into an innovation incubator. Assessment isn't just about individual performance anymore, it's about how learners contribute to something larger, a living reef of ideas, tools, cultures, and futures. Where previous models focused narrowly on individual aptitude, the Cosmogogy framework confirms that the most powerful metric of learning in the 21st century is "whether the reef grows", whether the ecosystem becomes healthier, more diverse, more innovative, and more capable of addressing complex challenges. This growth, measured through collaborative success and ethical impact, constitutes the authentic indicator of knowledge transformation in our AI-augmented era.

Implications for Future Practice

The findings presented here carry significant implications for educational practice, policy, and future research. Institutions committed to preparing students for an interconnected, AI-augmented world must move beyond incremental adjustments toward fundamental reconceptualization of assessment purpose and practice.

For Practice: Educators should experiment with assessment approaches that value collaborative processes alongside individual products, incorporating peer evaluation across boundaries and measuring real-world impact. This requires developing rubrics and evaluation criteria that capture sophisticated dimensions of collaboration quality, intercultural competence, and ethical AI partnership. Professional development should prepare faculty to facilitate rather than merely lecture, to design inclusive global learning experiences, and to guide students in critical and ethical AI use.

For Policy: Institutions must develop coherent policies addressing AI-assisted work that move beyond simplistic prohibition toward thoughtful guidance on appropriate and inappropriate AI use across different contexts. Credit systems and assessment regulations should accommodate collaborative global projects that may not fit traditional course structures.

For Future Research: Longitudinal studies should examine long-term outcomes of Cosmogogy-based learning, tracking whether participants demonstrate sustained global networks, enhanced professional capabilities, and leadership in addressing complex challenges. Research should investigate how different disciplinary contexts might adapt Cosmogogy principles, whether particular aspects of the framework prove more or less effective across diverse institutional settings, and how assessment approaches might be refined based on emerging evidence.

4.2 A Call to Cosmogogical Leadership

This paper ultimately issues a call for educational leadership to move decisively from defense mode to design mode in addressing the opportunities and challenges presented by AI and global connectivity. The central choice facing educators involves whether to remain reactive, desperately trying to preserve what exists and fighting against inevitable change, or to become architects of transformation, proactively designing educational futures that serve human development in an interconnected, AI-augmented world.

The goal of the Cosmogogy framework involves cultivating a new generation of leaders capable of addressing humanity's most pressing and complex challenges by skillfully blending human wisdom, AI capabilities, and direct engagement with global reality. These leaders must navigate complexity with both technical sophistication and deep humanity,

recognizing that addressing climate change, inequality, and other grand challenges requires collaboration across boundaries and integration of diverse forms of knowledge and capability.

We must fundamentally reframe the central question about AI in education. Rather than asking "Will AI replace humans?", a question premised on false competition between human and machine intelligence, we must ask "How will AI help us become more fully human?" This reframing positions AI not as a threat but as a partner in the ongoing project of human development, enabling us to focus energy on distinctly human capabilities: empathy, creativity, ethical reasoning, meaning-making, and the cultivation of wisdom.

The future of global education is not something that simply happens to us, a force we passively experience. Rather, it is something we must actively create together through deliberate choices about what we value, what we measure, and what we cultivate. By aligning educational design with the Cosmogogy ecosystem, we ensure that learning becomes simultaneously local AND global, inclusive AND innovative, technologically sophisticated AND deeply human. This is the promise and the challenge before us: to create educational futures worthy of the remarkable human potential we seek to develop, futures where assessment serves not as a barrier but as a catalyst for the collaborative creativity our world so urgently needs.

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