

ON THE VERGE OF A SYSTEM TRANSFORMATION AND THE ECOSYSTEM OF OPEN EDUCATION

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ABSTRACT

The field of education is currently undergoing significant upheaval, primarily due to the far-reaching impacts of COVID-19. This global pandemic has disrupted education for over 90% of the world's children, marking the most extensive educational disruption in history (UNESCO, 2020). In response, education systems need to display proactive courage and take the lead in adapting to the evolving demands of professional life. This entails transforming learning into a more student-centered, interconnected, dynamic, inclusive, and collaborative process, fostering an environment where creativity can thrive. Learning materials must adapt to these shifts in teaching and learning approaches. The focal point of this paper is to address the need for systemic change and to delve into the open education ecosystem. It explores emerging trends and prospects concerning evolving learning environments and scenarios, including online language assessment aspects. Notably, the role of learners as vital stakeholders is emphasized. An essential initiative discussed is the UNESCO Transforming Education Summit, a key effort launched by the United Nations to prioritize education on the global policy agenda. Its aim is to mobilize action, ambition, solidarity, and effective solutions to mitigate the learning losses induced by the pandemic and to lay the groundwork for an education transformation in our rapidly changing world. The article also aligns with the 2019 UNESCO recommendation on open educational resources and presents perspectives from the Open Education Consortium and the International Council for Open and Distance Education.

Key words: system transformation, ecosystem of open education, Artificial Intelligence, OER.

INTRODUCTION

Learning and education have always been important aspects of human life. However, our world is at a unique point in history characterized by increasingly uncertain and complex developments that are occurring at an unprecedented pace. In the face of rapid global challenges such as demographic, sociological and environmental change, globalization, climate change, equality, human rights and "leaving no one behind," as well as increasing technological development and transformation, not least in the context of open education and artificial intelligence (AI), the traditional education system is facing major challenges its core concepts need to be rethought. Education is in a state of upheaval, which was highlighted by the COVID-19 pandemic. It is widely known that the education of more than 90% of children worldwide has been disrupted by COVID-19, the largest disruption of education systems in history (Bozkurt et al., 2020).

Learning and education enable us to acquire the knowledge, skills, and competencies necessary for personal growth and social progress. But perhaps even more important are the joy of learning, intrinsic motivation, and self-esteem. In recent decades, however, modern education has prioritized formal education and formal assessments and examinations that are rigorous in time, space, and mode. As we move toward a more interdisciplinary, interconnected world where change is the only certain thing, we are on the cusp of systemic change in education. The current international model of education is obsolete and no longer relevant in an ever-changing world where change is the only certain thing. The current system

does not meet the needs of 21st century learners. Education systems must adapt to the changing demands of professional life and make learning more student-centered, connected, dynamic, inclusive, and collaborative so that creativity can flourish. They must also adapt to a globalized society and to the international job market.

This article addresses the emerging trends and futures (plural, as there are many futures—one size does not fit all) of new learning landscapes and scenarios in general that reduce educational inequity through open education, open education resources (OER), and alternative assessments and how these shape the future of online language assessment. Insights into new and future theories, methods, and technologies will be provided. Special attention is given to the role of learners as stakeholders, and language issues related to online learning are also addressed. In addition, issues relating to learning, learner competence, and the reliability and practicality of emerging trends in online assessment are addressed.

Futures Scenarios

No trend is unchangeable, however, education has the greatest potential for change to shape a just and sustainable future. For this work, major global organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) are developing ideas, initiating public debates, and stimulating research and action to renew education and create a new social contract for education based on the principles of human rights, social justice, human dignity, and cultural diversity that promotes sustainability (Ossiannilsson, 2022; UNESCO, 2021, 2022). This clearly recognizes education as a public responsibility and a common good.

According to EDUCAUSE (2023), there are various possible future scenarios for teaching and learning:

- *Growth*: The COVID-19 pandemic catapulted distance education modalities to the forefront of teaching and learning practices. While educators have used this momentum of digital transformation to create lasting institutional change, for-profit activities have widened the digital divide among students. Additional equity issues arise as employers increasingly become key partners in higher education, developing increasingly detailed microcredentials without investing in critical infrastructure to expand access.
- *Coercion*: By 2033, climate change will have forced thousands of families to relocate due to unsafe and unaffordable living conditions. Therefore, educators and employers are collaborating to offer students flexible options in the form of hybrid and HyFlex learning modalities that include personalized learning pathways across institutions to meet their needs. Politicians are increasingly spreading misinformation about our climate to win votes, making higher education one of the few reliable sources of information on climate change.
- *Breakdown*: In the 2020s, AI tools have become a low-cost and effective alternative to humans for many tasks in higher education. Faculty and staff numbers are declining, making it even more difficult for remaining staff to find time to connect with students. Many students have dropped out because they do not care about their personal well-being, and the 2025 “enrollment cliff” exacerbated the problem. As an alternative to studying, students are embracing a “meta-life” by cultivating relationships with human avatars, creating customized living environments, and developing new revenue streams—all in the AI-driven metaverse.
- *Transformation*: Faculty and staff can use novel AI tools to create, edit, and distribute content. Low- and no-code technologies enable any member of higher education institutions, regardless of skill level, to create digital content. These tools have freed up capacity among faculty and staff, who can now spend much of their time engaging with students and fostering community and belonging within the institution. These tools

also serve to bring together people from diverse local and international communities and with very different political beliefs.

Some emerging trends and reasons for the need for change cited by the major global organizations and larger advocacy groups are as follows:

- *Social*: Student demand for flexible and convenient learning modalities is increasing. The focus on equitable and inclusive knowledge, teaching, and learning has expanded and intensified. Microcredentials programs are gaining momentum and maturity.
- *Technological*: The potential of AI is becoming more prevalent. The dichotomy between online and face-to-face instruction is being broken. Low- and no-code technologies that simplify complex processes are enabling more people to create digital content.
- *Economics*: Affordability and return on investment influence potential students' decision to enroll in college. As funding for public higher education declines, institutions are expected to do more with less. The need and demand for lifelong learning in the workplace is increasing.
- *Environment*: Climate change is increasingly impacting our daily lives. Environmental issues are being integrated into academic programs and institutional operations.
- *Political*: Governments are using disinformation and propaganda as leverage. Nationalism is on the rise worldwide. Party disputes increasingly block decision making and action in the U.S. political system.

According to EDUCAUSE (2023), some of the emerging technologies concern:

- AI-powered applications for predictive personal learning
- Generative AI (GAI)
- Blurring the boundaries between learning modalities
- HyFlex, hybrid, and blended modes of instruction
- Microcredentials and microlearning
- Fostering a sense of belonging and connectedness among students

In addition, researchers are calling for a modified quality agenda that includes equity, ethics, bildung, relevance, effectiveness, efficiency, lifelong learning, inclusivity, satisfaction, impact, well-being, learning capacity, and contributions to development to both individual and society growth (Ossianniilsson, 2021a, 2021b)

OPEN EDUCATION: AN ECOSYSTEM

On the cusp of systemic change, open education is emerging as a promising solution to achieving UNESCO Sustainable Development Goal 4 (SDG4) for education (UNESCO, 2016, 2023). The 2030 Agenda for Sustainable Development is an action plan for people, the planet, and prosperity. It includes 17 SDGs. These goals are indivisible and include human, economic, social, and environmental dimensions. SDG4 focuses on education and aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (UNESCO, 2020, 2023). It is argued that open education can revolutionize the way we learn, teach, and share knowledge. Bozkurt et al. (2023a) surveyed researchers on a global scale, asking guiding questions about why openness in education is important. This furthered collective efforts by drawing on individual testimonies understood as living narratives to illustrate the value of openness in education as a practice. The data gleaned from these narratives suggest that openness in education is a complex, multifaceted concept that is closely intertwined with a set of values, including aspects such as participation, access, flexibility, affordability, education, barrier removal, empowerment, caring, individual agency, trust, innovation, sustainability, collaboration, co-creation, social justice, equity, transparency, inclusivity, decolonization, democratization, participation, freedom, and respect for diversity.

Open education is not a new concept, but recent technological developments have made it more accessible and easier to implement. Open education is a movement that has gained momentum in recent years and is on the verge of transforming the traditional education system. With the increasing accessibility of technology and the growing demand for lifelong learning, open education is quickly becoming a viable alternative to traditional education. At its core, open education is about making educational resources freely available to anyone who wants to learn. By removing barriers to access, open education enables everyone, regardless of background or financial means, to access quality education.

Open education has the potential to change the way we think about education. It is a rapidly growing movement that seeks to democratize access to education by making learning materials freely available to anyone who wants them. At the same time, the open education movement is also on the verge of systemic change. More and more institutions and organizations are embracing the principles of open education, and new educational models are emerging that challenge the traditional classroom-based approach. This has led, for example, to the development of Massive Open Online Courses (MOOCs), online learning communities, and other digital learning tools that are transforming our understanding of education. For open education to reach its full potential, it must evolve and adapt to the changing technological and social landscape. It also needs to align with other open movements, such as open science and open pedagogy. The latter is a movement that aims to democratize education by making educational resources, tools, and practices freely available to anyone who wants to learn. It is based on the principles of openness, inclusivity, and collaboration.

Open education is an ecosystem that encompasses a set of principles concerning openness, collaboration and participation, practices, culture, policies, and technologies that support the sharing and reuse of educational resources. Governments and educational institutions are beginning to recognize the value of open education and are implementing policies to support its growth. These include initiatives to provide funding for open education projects, to promote the use of OER in the classroom, and to support the development of open education platforms. The open education ecosystem is supported by several organizations and initiatives that promote its principles and practices, including the Open Education Consortium, Creative Commons, UNESCO Open Educational Resources Program, and Open Education Europe. These organizations provide leadership, advocacy, and resources to advance the open education movement and communicate its benefits to a global audience. The open education ecosystem consists of a diverse group of individuals and organizations all working together to advance the goals of the movement. These include educators, researchers, technologists, policymakers, and students, among others. Each of these groups brings its own perspective and expertise to the table, creating a dynamic and collaborative community that is driving the transformation of education. Together, they are creating a new educational paradigm that is learner-centered, flexible, and accessible.

Open education offers an alternative to the traditional model of education based on a fixed curriculum, a set of learning objectives, and traditional assessments. In the new models/futures of open education, the entire goal and methods of assessment must be rethought to meet the core values of openness. Open education allows for more flexibility and individuality in learning, allowing learners to choose their own path and pace. The rise of open education has also been driven by the growing realization that traditional education systems are not meeting the needs of many learners. In many parts of the world, access to education is limited by factors such as cost, geography, and cultural barriers. Open education offers a way to overcome these limitations by providing free and open access to educational resources that can be used by anyone anywhere. Learning resources must evolve to reflect these changes in the way teaching and learning occur. Open education also encourages collaboration and participation. Learners can work together on projects, share resources, and learn from each other. This collaborative approach to learning meets the needs of the 21st

century workforce, which must be able to work together and solve problems in a team-based environment.

The open education movement has been fueled by several technological and social factors. Two of the most important drivers have been the advent of the Internet, which has made the dissemination of and access to educational content and resources easier than ever, and the global rise of open-source software and platforms. Open education benefits from advances in educational technology, particularly open educational technology (OET), which refers to the development and use of open-source software, platforms, and tools for teaching and learning. OET includes open courseware, learning management systems, learning analytics, open badges, and other educational technologies that support the creation, sharing, and assessment of OER and open pedagogical practices and cultures. These advances in technology have enabled individuals and organizations to create and share interactive and engaging educational resources that can be tailored to the needs of individual learners. OET enables educators to develop and deliver engaging and interactive learning experiences that leverage the power of technology and data.

One of the key features of open education is OER, defined by UNESCO (2019) as follows:

Open Educational Resources (OER) are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation, and redistribution by others.

By using OER, educators can create personalized and engaging learning experiences that meet the needs of diverse learners. In addition, OER can reduce the cost of education and improve its quality by enabling collaboration, feedback, and peer reviews. This includes not only traditional academic content such as textbooks and lecture notes but also interactive multimedia resources such as video tutorials and simulations. The goal of open education is to create a global ecosystem of educational resources that can be freely shared and reused without the constraints of traditional copyright and proprietary licensing models. Another key feature of open education is its emphasis on lifelong learning. In the rapidly changing world of work, it is critical for individuals to continue their education throughout their lives in order to remain competitive. Open education offers learners the opportunity to continue learning and developing new skills throughout their lives.

Other new models of open education include microcredentials and badges that allow learners to receive recognition for specific skills and achievements. These credentials are often more flexible and affordable than traditional degrees, making them accessible to a wider range of learners.

Despite the many benefits, open education still faces challenges. One of the biggest obstacles is ensuring the quality and credibility of educational resources and practices. With so much content available to everyone online, it can be difficult for learners to distinguish between high-quality resources, and there is a risk that low-quality or unreliable content will be disseminated, which can negatively impact student learning outcomes. This problem can be addressed by implementing quality-control mechanisms, such as peer reviews, user feedback, and certification programs. Another challenge is the lack of awareness and understanding among educators and policy makers. Many people are still skeptical about the value of open education and see it as a threat to traditional education.

Yet another challenge is developing sustainable funding models that can support the creation and dissemination of high-quality educational resources. While many open education initiatives are currently funded through grants and philanthropic donations, there is growing recognition that more sustainable business models are needed to ensure continuity. In

addition, the digital divide—unequal access to technology and the Internet in different communities—is a major challenge. In many parts of the world, especially in developing countries, access to technology and the Internet is limited, which can prevent learners from accessing open educational resources and participating in open pedagogical practices. To address this challenge, there must be investment in infrastructure to provide marginalized communities with access to technology and the Internet.

Language and culture also pose significant challenges to open education, particularly regarding translation and localization. Although English is the predominant language of instruction and communication in the open education ecosystem, many learners and educators prefer to learn and teach in their native language. Therefore, translation and localization of educational resources and tools into multiple languages is essential to promote inclusion and accessibility (Kurek & Skoworn, n.d.). However, this can be a resource-intensive process that requires significant time and investment.

Assessment is another area where open education faces challenges. Traditional assessment methods such as exams and tests may not be appropriate for open educational practices that emphasize collaboration, creativity, authentic learning, and critical thinking. There is a need to develop alternative assessment methods that can effectively evaluate the learning outcomes of open education. This requires consideration of the core values of education that can be used to assess the competencies and skills that learners acquire through the practices of open pedagogy and open educational culture. Accordingly, assessment tools must be developed that are consistent and aligned with such learning goals. Assessments in the context of OER are discussed in the following section, but first we discuss AI in the context of open education, OER, system change, and the role of assessments.

ARTIFICIAL INTELLIGENCE

AI has taken the world by storm. The UNESCO recommendation on the ethics of AI (Bozkurt et al., 2023b; UNESCO, 2022) sets out a set of values consistent with the promotion and protection of human rights, human dignity, and environmental sustainability. It promotes key principles such as transparency, accountability, fairness, and the rule of law, while keeping in mind the importance of human oversight of AI systems. What makes the recommendation particularly applicable, however, are its broad policy action areas that enable policymakers to put into action core values and principles related to data governance, the environment and ecosystems, gender, education and research, health, and social well-being, among many other areas. The 2023 Horizon Report on Teaching and Learning also emphasizes the human perspective. However, that discussion moves between the seemingly polar ideas of the displacement of human activities by powerful new technological opportunities and the need to put more humanity at the center of everything we do.

Given the rapid pace of development worldwide, it is strongly recommended that higher education institutions address generative AI technology and its implications for them, formulate appropriate strategies for its use, train staff and students, and, more importantly, reform the assessment system used for their subjects, as in the case of this book on language subjects. AI is not just a glitzy tech buzzword. AI's potential to revolutionize education goes beyond simply improving student engagement. It is about reshaping the educational landscape to enable greater scalability and more authentic assessment methods without overwhelming teachers or requiring costly new platforms. AI is a powerful tool that is changing the way we approach education, especially in self-directed learning. AI enables educators to provide students with personalized learning paths, immersive experiences, and real-time feedback—elements that increase engagement and enable deeper learning. While platforms that leverage AI, such as generative AI technology, hold great potential for transforming higher education, higher education institutions must carefully address the challenges this technology presents to optimize its benefits and minimize associated risks, such as compromising

academic integrity (Bozkurt et al., 2023b). AI transforms self-directed learning into experience and feedback. In the world of self-directed learning, AI-driven technologies can complement the role of teachers by providing differentiated, real-time feedback that goes beyond simple right or wrong answers. AI systems can be programmed to evaluate a student's responses based on a variety of parameters, providing feedback not only on the correctness of an answer but also on the depth of understanding, reasoning, and even creativity. In this way, AI can help make assessments more authentic, relevant, and meaningful to the understanding of the subject matter. New AI-powered tools such as ChatGPT open new possibilities for content creation, communication, and learning in higher education, but they also raise new concerns about misuse and overuse of the technology. Our shared humanity has also become a central issue in higher education as faculty and leaders continue to struggle to understand and meet the diverse needs of students and find ways to cultivate institutional communities that foster student well-being and belonging. It is critical to emphasize that AI must be inclusive by design to truly benefit and achieve lifelong learning for all (Teng, 2023).

Gupta (2023) argues that today's students are increasingly digitally savvy and accustomed to technology being woven into every aspect of their lives. It is no wonder that they expect the same from their learning experiences. Traditional classroom models, while still important, are no longer the only way to acquire knowledge. The emergence of self-paced e-learning courses during the Covid-19 pandemic is evidence of this shift, allowing students to learn on their own schedule and at their own pace (Bozkurt et al, 2020). However, Gupta said, it is important to ensure that these learning experiences remain engaging, personalized, and effective.

AI in the Context of Assessments

Assessment and AI can be combined to improve various processes and outcomes in different areas. Some of the benefits and challenges associated with integrating AI into assessment, which of course apply to the language field as well (learning, teacher training, institutional/departmental language policy), are as follows:

- *Efficiency and Speed:* AI-powered assessment tools can process and analyze large amounts of data quickly, reducing assessment time and providing immediate feedback to stakeholders.
- *Accuracy and consistency:* AI algorithms can standardize the assessment process, ensuring consistent and unbiased assessment, reducing human error, and minimizing subjective variation.
- *Personalization:* AI can tailor assessments to learners' individual needs and abilities, providing personalized learning paths and adaptive feedback for better performance and engagement.
- *Data-driven insights:* AI can generate valuable insights from assessment data that enable educators to identify patterns, trends, and areas for improvement and provide information for instructional strategies and curriculum development.
- *Improved assessment design:* AI can help develop assessments that can be combined with AI to improve various processes and outcomes in different areas. AI can help develop assessments that measure a broader range of skills and competencies, including those that are difficult to assess using traditional methods.
- *Accessibility:* AI-powered assessment tools can be designed to appeal to people with different abilities and learning styles, promoting accessibility and equity.
- *Automation of routine tasks:* AI can automate administrative tasks related to assessment creation, grading, and record keeping, freeing teachers to spend more time on strategic and personalized instructional activities.
- *Adaptive learning paths:* AI can adapt learning paths based on assessment results in real time, ensuring that learners receive appropriate and targeted instruction to close their knowledge gaps.

- *Privacy and security*: Collecting and using sensitive learner data for AI-powered assessments raises privacy, security, and regulatory compliance issues.
- *Bias and fairness*: AI algorithms may unintentionally perpetuate biases present in the data on which they are trained, leading to unfair assessments, and reinforcing existing inequities in education.
- *Transparency and explainability*: Many AI models operate as “black boxes,” making it difficult to understand how they arrive at certain assessment results. Achieving transparency and explainability is critical for trust and acceptance.
- *Integration and acceptance*: Integrating AI into assessment processes may require significant changes in educational systems, infrastructure, and teacher training, which can create resistance or challenges to implementation.
- *Initial investment and cost*: Implementing AI-enabled assessment systems may require significant upfront investments in technology, training, and infrastructure, which may be a barrier for some educational institutions.
- *Maintenance and updates*: AI systems must be regularly maintained, updated, and improved to remain effective and accurate, requiring ongoing investments in resources and expertise.
- *Lack of expertise*: The development and use of AI in assessment requires specialized knowledge and skills that are not readily available in educational institutions, which can lead to a skills gap.
- *Overconfidence in technology*: There is a risk of over-reliance on AI, thus compromising human judgment and intuition in educational assessment, which remain critical to fully understanding learners.

With the increasing development and use of AI, there is an urgent need to rethink assessments and their values. Elkhoury (2020, 2023) discusses how alternative assessments can provide a fair approach to academic integrity. She discusses three main reasons for academic dishonesty and how alternative assessments can help address these reasons, namely that we should design assessments that engage students and prepare them, that focus attention on learning, and that promote healthy collaboration rather than policing students and treating them as culprits.

AI has brought assessment and academic integrity to the forefront in higher education and calls for innovative approaches to assessment. Such reform is urgently needed, and failure to act could pose a major threat to all degree programs offered after November 30, 2022. Students' access to generative AI technology makes their responses to many types of exams highly questionable. This is particularly the case when students take these exams outside of class time or have access to computers during the exam. This raises the question of whether universities should ban generative AI technology. And, if so, are they in a position to do so? The answer to both questions, of course, is no. Even if universities were to ban generative AI technology on their networks, students would still be able to use generative AI technology platforms at home or on other networks. Instead, what universities urgently need to do is to review generative AI technology and its impact on their institutions, formulate appropriate policies for its use, train staff and students, and, more importantly, reform the assessment system used for their subjects.

Gupta (2023) argues that traditional forms of feedback can be too slow and fail to address areas where a student is struggling. AI can transform static course materials into dynamic, interactive content. Imagine a history course in which students interact with AI-driven chatbots posing as historical figures, or a literature course in which AI-generated scenarios allow students to delve deeper into the context of a particular text and engage in experiences that enhance their language development. These include, but are not limited to: Reading, vocabulary, writing, and speaking skills by reporting on their experiences interacting with the AI, reflecting on and reporting on their acquired knowledge. Such immersive experiences increase engagement and can make learning more memorable and enjoyable. With AI,

students receive immediate, constructive feedback based on their responses and interactions, which promotes understanding and continuous improvement. AI can even provide feedback on responses to open-ended texts, guiding students to more comprehensive and thoughtful responses. This can be an advantage for educators. In today's fast-paced academic environment, teachers often have little time to provide comprehensive feedback to each student. Particularly in larger classes, it can be difficult to engage students in deep, meaningful ways that support their learning. As a result, teachers often resort to multiple-choice tests that are quick to score and easy to implement but often fall short of assessing critical thinking, creativity, and understanding. This is especially true for executive education, which is not just about teaching theoretical knowledge but also practical, industry-related skills that can be applied in real-world scenarios.

Ghapanchi (2023) offers seven ways to assess student learning that mitigate the impact of AI authoring:

- Tiered assignments
- In-class presentations followed by questions
- Group projects
- Personal reflection essays
- Class discussion
- In-class handwritten exams
- Performance-based assessments

It is important to balance the benefits of AI in evaluation against the challenges that may arise to ensure that AI is used in a way that maximizes its benefits while addressing ethical, privacy, and fairness concerns. Collaboration among educators, AI developers, policymakers, and other stakeholders is critical to address these challenges and realize the potential of AI in educational assessments.

Rivers and Holland (2023) argue that AI allows us to leapfrog multiple layers. This does not mean that the much-used frameworks become obsolete but just that we may need a new approach. This disruption presents an opportunity for change. Bloom's taxonomy is a good example of this. We used to see the taxonomy with a broad base (remembering) and a small peak at the top (creating). The base represents the lower thinking skills of remembering, understanding, and applying, while analyzing, evaluating, and creating are the higher thinking skills, with creating being the sometimes-elusive goal in higher education. Rivers and Holland (2023) emphasize that the introduction and use of AI is also changing the way we view and interpret Bloom's taxonomy. In the use of generative AI technology, however, the pyramid flips. Knowledge creation is now available to the masses when a simple prompt is entered correctly. The small tip now shows the ability to remember—the retrieval and sharing of knowledge acquired only by those who invest time and commitment to understand information created by generative AI technology through evaluation, analysis, and application. When considering the implications of generative AI technology, the common understanding of higher- and lower-order thinking skills has been literally and metaphorically turned on its head. According to Rivers and Holland (2023), Bloom's Taxonomy is still an accepted method for teaching, learning, and assessment. They suggest that when integrating generative AI technologies into teaching, learning, and assessment, we should reverse our approach and start creating. Suddenly, AI becomes a learning partner, a co-creator that can accelerate cognition. For example, students could be encouraged to use ChatGPT to create a business model for a new entrepreneurial venture. The business model is evaluated and analyzed using a set of tools that are explored throughout the module. Students will apply the results of the assessment and analysis and consider, for example, the use of sustainable business strategies. Finally, face-to-face assessments such as presentations, oral exams, or reflective interviews may be used to check students' understanding and recall.

Using AI to improve open education is not simply about combining open content or resources with AI techniques and algorithms. It is much more complex; it is an entire ecosystem that should be carefully studied and changed to leverage “openness” and “intelligence” together for better teaching and learning experiences. Tlili and Burgos (2022) suggest five levels. At the first level, the mindset and personality of learners and teachers, the main actors in this ecosystem, should also be “open” to adopt this change in the future learning and teaching process, as different cultures may perceive OER and the introduction of technologies such as AI differently. Social challenges may also limit the adoption of AI-based open education. As a second level, they suggest transforming learning environments, platforms, and repositories from static and black-box systems to more open and dynamic systems that can be easily adapted. As a third level, the implemented AI algorithms, and systems, as well as the generated protocol data, should be open and interoperable so that they can be reused in different contexts. To better deploy AI-based OEPs and manage intelligent and open learning environments and platforms, educators and learners should have the appropriate skills. Finally, the fifth level, which could support all the aforementioned four levels, is policy. Policymakers could enact laws and regulations to protect user privacy and copyright in open learning environments and in the development and use of AI-based education systems. England (2023) has proposed an interesting way to use GPT to support assessment using six criteria. He created a priming prompt that can be inserted into GPT to evaluate one’s assessment: (i) intrinsic or extrinsic, (ii) assessment or growth, (iii) once or multiple, (iv) who assesses, (v) who creates, and (vi) unplugged. He also suggests how to modify one’s evaluation to make it AI-proof.

CONCLUSION AND RECOMMENDATIONS FOR ONLINE ASSESSMENT PRACTICE/ DESIGN/ RESEARCH

This article explores the critical intersection between transformative changes within educational systems and the expansive field of open education, which even requires new ways of assessing. Additionally, it delved into evolving patterns and multiple prospective pathways—acknowledging the diverse array of possible futures—pertaining to contemporary educational settings and scenarios. These include the open education movement, encompassing elements such as OER and the influence of AI. Moreover, aspects of online assessment, particularly within the context of language education, have been considered.

Open education and lifelong learning are on the cusp of systemic change that has the potential to transform the traditional education system and make education more accessible, affordable, and inclusive. The open education ecosystem is dynamic and diverse, encompassing a wide range of actors, practices, and technologies. By embracing the principles of openness, inclusivity, and collaboration, we can create a new educational paradigm that fosters lifelong learning, personal growth, and social progress.

Open education grapples with numerous hurdles concerning quality assurance, the digital gap, linguistic diversity, and assessment methodologies. To surmount these obstacles, it is essential to foster collaboration and innovation among various stakeholders and to devise novel policies, methodologies, and technological solutions that can dismantle hindrances within open education. Addressing these challenges is pivotal in unleashing the complete potential of open education, paving the way for a more inclusive, easily accessible, and efficient education system.

The emergence of AI and generative AI technology is poised to revolutionize the landscape of assessments. Exploring the applications of AI has shed light on several ways it can be a valuable research collaborator, assisting in text analysis, idea elucidation, enhanced comparisons for scientists, automated translation, and evaluating learning using ChatGPT. It also opens avenues to delve into the understanding of human nature. Specifically, the automated translation function is highly beneficial, given the growing need for translating OER

and contextualizing them. AI proves to be a valuable asset in promoting this task. However, it is imperative to remember that AI is merely a tool crafted by human hands; its outputs reflect what we input. As custodians and distributors of knowledge founded on robust and ethical research, it falls to us to utilize digital tools in ways that advance society in the long term through the judicious application of GAI. The true value and impact of AI will be unraveled through its scale, maturity, and prudent utilization at different junctures. Given AI's enduring presence, encompassing both positive and negative aspects, it is vital to proactively embrace it and adapt to it while maintaining a critical stance, as is customary when new models, materials, resources, or tools are introduced. This amplifies the significance of AI expertise and guidance for users.

While AI has been in existence for a considerable time, we find ourselves in the nascent stages of the AI era, and the advent of generative AI technology has significantly altered our approaches to learning and work. Engaging with and utilizing AI necessitate a blend of knowledge, skills, a shift in mindset, and equilibrium. Achieving this balance also entails promoting inclusivity and striving for equity. It is crucial not only to learn alongside AI but also to comprehend its functioning. The focus is shifting towards evaluating processes, not just the end results or products. Learning about AI is imperative at both an individual and a societal level. Emphasizing the symbiosis of machines and humans rather than pitting them against each other is paramount. Human resources remain the cornerstone of our endeavors. Therefore, fostering knowledge, enhancing capabilities, and embracing socio-ethical, human-centric, and well-being approaches is critical for shaping the future we envision and aspire to create. Open education, lifelong learning, and a human-centered ethical approach are likely the most efficient and effective avenues toward realizing the SDGs and the 2030 Agenda, ensuring no one is left behind.

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