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From Disruption to Innovation: Integrating Active Learning in AI-Resilient Assessment Design

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Abstract: Artificial Intelligence (AI) and generative learning technologies are transforming the landscape of higher education. With tools capable of producing essays/reports, solving complex problems, and simulating critical thought, traditional assessment practices are becoming increasingly vulnerable. The rapid, widespread, and easy accessibility of generative AI raises concerns about academic dishonesty, plagiarism, and the erosion of original thought. This disruption calls for a reimagining of assessment models that are not only robust in the face of AI but also pedagogically sound. Active Learning Strategies (ALS) offer a pathway forward. Rooted in constructivist and experiential learning theories, ALS emphasizes student participation, collaboration, and real-world application. By shifting from passive learning methods to active learning engagement, these strategies promote higher-order thinking and personal investment in learning, qualities that AI cannot easily replicate. This paper aims to analyze how ALS can underpin AI-resilient assessment design, drawing insights from a scoping literature review, an applied case study from the UNESCO-ESCS Chair in Portugal and results from inquiries to students.

Keywords: Active learning strategies, Artificial intelligence, AI-resilient assessment practices, Education, UNESCO-ESCS chair

1. Introduction

Artificial Intelligence (AI) and generating is transforming the landscape of higher education. With tools capable of producing essays, solving complex problems, and simulating critical thought, traditional assessment practices are becoming increasingly vulnerable (Howell, 2021). The widespread accessibility of generative AI raises concerns about academic dishonesty, plagiarism, and the erosion of original thought. This disruption calls for a reimagining of assessment models that are not only robust in the face of AI but also pedagogically sound.

Active Learning Strategies (ALS) offer a pathway forward. Rooted in constructivist and experiential learning theories, ALS emphasizes student participation, collaboration, and real-world application (Howell, 2021; Van Alten, 2019). By shifting from passive reception to active engagement, these strategies promote higher-order thinking and personal investment in learning, qualities that AI cannot easily replicate. This paper examines how ALS can underpin AI-resilient assessment design, drawing insights from scholarly literature and an applied case study from the UNESCO Chair in Portugal (UNESCO, 2025).

2. Literature Review

2.1 From Disruption to Innovation: Active Learning in AI-Resilient Assessment Design

The rapid advancement and widespread adoption of Artificial Intelligence (AI) tools such as ChatGPT have introduced profound disruptions to higher education, particularly in the field of assessment. These technologies pose a dual challenge: they offer pedagogical opportunities for personalization and support, but also raise significant concerns regarding academic integrity (Howell, 2021; Van Alten, 2019). As AI-generated content becomes increasingly sophisticated and difficult to detect, the boundaries between original student work and machine assistance are blurred, demanding a rethinking of assessment models across institutions.

2.2 AI and the Challenge to Academic Integrity

The arrival of generative AI has magnified concerns about cheating, plagiarism, and e-cheating. Students can now easily produce essays, problem solutions or reflections with minimal effort and without a true demonstration of understanding. Cotton, Cotton, and Shipway (2023) describe this issue as a growing threat to academic integrity in their paper “Chatting and Cheating”, underlining the urgency for new responses. Dawson

(2020) similarly argues for the defense of assessment security in a digital world, calling attention to the need for structural and pedagogical innovation to address emerging risks, including sophisticated forms of contract cheating (Howell, 2021).

These challenges force educators and institutions to reconsider not only how students are assessed, but also what should be assessed. In a context where AI can simulate surface-level outputs, the need for assessments that demand genuine understanding, critical thinking, and contextual application becomes essential (Howell, 2021).

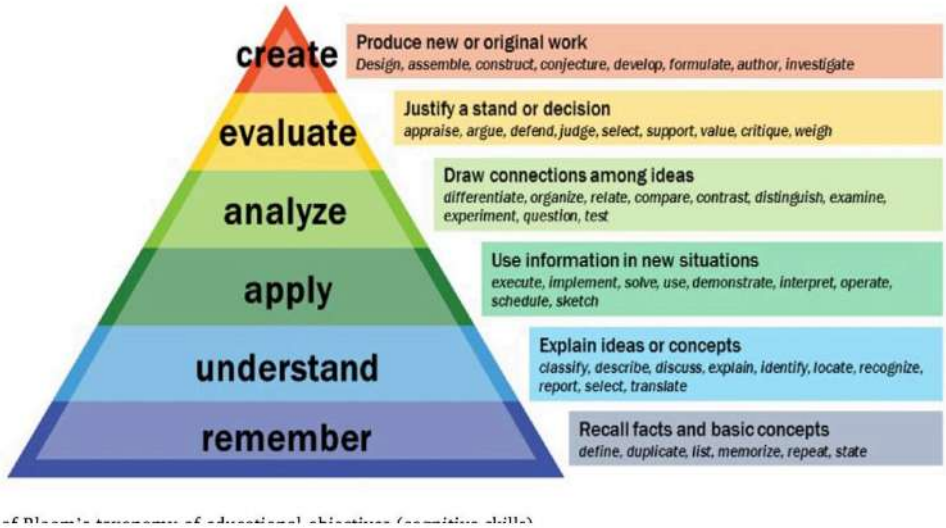


Figure 1: Adapted from Bloom's taxonomy of educational objectives Source: Vanderbilt University Center for Teaching, released under a Creative Commons Attribution Licence and adapted from Howell, 2021

2.3 Active Learning as a Pedagogical and Ethical Response

Howell (2021) presents an educational model for sustainable development in higher education that integrates active learning, reflective exercises, and the active methods of participation from students. That means the students in this methodology have active participation in the learning process, promoting autonomy, critical thinking, brainstorming, and collaborative participation. "The professor is a facilitator in this process in order to promote knowledge construction. When applied to assessment, these practices not only enhance learning outcomes but also create contexts that are difficult for artificial intelligence systems to replicate, thereby reducing the risks of plagiarism and superficial responses"(Howell, 2021).

Active learning (AL) emerged as an important pedagogical model that engages students directly in the learning process, active learning promotes deep learning, critical engagement, and reflective thinking (Howel, 2021). Mata et al., (2023) confirms the potential of these methods to create self-knowledge from students in the classroom and empower students as active participants rather than passive recipients of information. Indeed, Freeman et al., (2014), confirm that active learning significantly improves student performance across science, engineering, and mathematics.

According to Howell (2021) "the skills fostered by active learning such as problem-solving, collaboration, metacognitive reflection, and contextual analysis are far more difficult to replicate through generative AI". When students are required to co-construct knowledge, debate ethical dilemmas, or design context-specific projects, the role of AI as a shortcut becomes limited.

2.4 Designing Assessments that Resist to AI Misuse

Rather than focusing only on detection and control, educators are increasingly called to redesign assessment tasks that are resilient by design and nature. This means constructing tasks that require authentic application, personalization, and critical response that undermine the utility of AI-generated outputs AI according to Howell, (2021); Mata and Dos-Santos (2025) and Mata and Dos-Santos (2024).

On the other hand, authentic assessment has been widely recognized as a powerful mechanism for both skill development and academic integrity. Sotiriadou et al., (2019) highlights the role of authentic, real-world tasks

in fostering employability and reducing misconduct. These tasks ask students to apply knowledge in novel, often collaborative ways thus making AI-generated answers either irrelevant or easily detectable.

The literature identify other essential principles for AI-resilient assessment design include, namely: 1) Reimagining assessment purposes and in this case Bearman et al. (2020) advocate for a shift away from content reproduction and towards demonstrations of complex learning, including personal reflection, creativity, and integrated knowledge; 2) Formative assessment and feedback according to Nicol and Macfarlane-Dick (2006) "self-regulated learning and ongoing formative feedback are essential to learning ownership". This continual process of feedback and revision builds trust and discourages reliance on external, automated tools; 3) Finally, together, these approaches position active learning not just as a pedagogy, but as a design strategy to embed integrity and engagement within assessment practices in an AI-mediated world (Mata et al., 2025).

2.5 Towards a Culture of Critical Digital Citizenship

Incorporating active learning into assessment design also supports broader goals beyond classroom performance. As Selwyn (2019) and Buckingham (2020) suggest, the educational response to AI must go hand in hand with fostering media literacy, digital ethics, and civic responsibility. Students must be prepared not only to collaborate with AI but to critically evaluate its role and impact.

This perspective aligns with the mission of the UNESCO Chair "Communication, Media Information Literacy and Citizenship" (UNESCO-ESCS, 2025), which serves as the empirical foundation for the case study in this article. By bridging assessment innovation and media literacy, the Chair exemplifies how educational institutions can cultivate critical, empowered citizens prepared for complex digital futures (UNESCO-ESCS, 2025).

The disruption posed by AI in higher education is not only technological, but it is also epistemological and mainly ethical. Active learning offers a concrete, research-informed path toward assessment models that both mitigate the risks of AI misuse and promote meaningful learning. Through authentic, formative, and participatory tasks, educators can design assessments that prioritize critical engagement over reproduction, reinforcing academic integrity and preparing students to thrive in a world where working with AI is more valuable than being replaced by it (Howell, (2021).

3. Methodology

This paper presents various methods and techniques. First, we present a scoping review based on the SCOPUS database, followed by an initial selection of 178 papers. Second, a case study was conducted based on results the UNESCO - ESCS Chair "Communication, Media Information Literacy and Citizenship" at the School of Communication and Media Studies (ESCS) in Portugal. The case study was based on an open interview with a participant in a Chair, namely a researcher from ESCS and UNESCO-ESCS Chair. Finally, students from the bachelor's degrees in journalism and Audiovisual and Multimedia from ESCS were inquired about the use of AI in evaluation in their classes.

4. Results

The scoping literature review was based on information and data performed from May to June 2025. The search includes just scientific papers on SCOPUS database in English language, mainly involving full papers in journals and peer-reviewed articles in AI in education, assessment design and ALS to avoid the plagiarism. Content analysis was used, and we identified the main components of AI-resilient assessment, including authenticity, adaptability, and interdisciplinarity.

Second, a *case study* was conducted on the UNESCO Chair "Communication, Media Information Literacy and Citizenship" at the School of Communication and Media Studies (ESCS) in Portugal based on the one participant interview and developed activities by the UNESCO-ESCS Chair. The results presented are based on her/his Working Group experience/participation and on her personal view as a participant. Also, we include information and data about the UNESCO- ESCS Chair based on Bonacho (2025), namely, the main goals of the chair and their applicability at ESCS among students, academic staff and the practical results obtained until now.

4.1 Synthesis: Designing AI-Resilient Assessments

Both literature and case study underscore the importance of moving beyond static assessments. AI-resilient assessments are characterized by their focus on processing over product, collaboration over isolation, and critical inquiry over memorization. Examples include iterative writing projects, oral defenses, group

presentations, and reflective journals. These methods promote originality, accountability, and ethical engagement.

4.2 Case Study: Designing AI-Resilient Methods and Assessments in SDGs in Escola Superior de Comunicação Social in Lisbon - Polytechnic University of Lisbon

At the Escola Superior de Comunicação Social (ESCS), since the academic year of 2022-2023, the Sustainable Development Goals (SDGs) have been mandatory integrated into the curricula of all courses across the institution's undergraduate and postgraduate programs. The programs encompassed by this initiative include Journalism, Audiovisual and Multimedia, Advertising and Marketing, and Public Relations and Organisational Communication/Management at both the Bachelor's and Master's levels.

Within each course, the SDG-related content is adapted to align with the specific curricular structure, ensuring, on the one hand, the implementation of active learning methodologies. This involves students directly applying the relevant SDGs, targets, and indicators to a specific thematic area of the course as part of their academic performance and development. These projects are supported through continuous in-class supervision in groups by faculty members, as well as additional tutorial support outside the classroom.

At the conclusion of the projects, students, mainly working in groups, present their work to their peers and instructors, responding to questions regarding their findings and methodologies. Prior to presentation, all reports submitted by students undergo plagiarism detection by the faculty. In cases where plagiarism is identified, students are required to redo the assessment.

4.3 Insights from the UNESCO-ESCS Chair Case Study

The UNESCO Chair integrates ALS through collaborative projects, digital storytelling, media critique, and civic engagement initiatives. These practices promote active citizenship, media literacy, and ethical awareness. The emphasis on real-world challenges, such as misinformation and climate change, connects academic learning with societal needs, creating authentic and context-rich assessment environments (Bonacho, 2025; and UNESCO-ESCS, 2025). Students engage in activities like analyzing misinformation campaigns, creating community-based interventions, and participating in peer-reviewed reflective blogs. These tasks require critical engagement and personal expression, making them difficult for AI to replicate or automate.

4.4 Results from the Interview of UNESCO – ESCS Participant

According to Bonacho (2025) (Appendix 1), "The Chair aims to integrate research and education into society in order to develop fundamental skills for critically communicating and understanding the world, while resisting polarization and stereotypes." Polarization is also a consequence of the dominant presence of the mainstream media in Portugal partially dominated by "'partisan' journalism" (Álvares & Damásio, 2013; Santana-Pereira, 2016). On the other hand, nowadays due to the failure of the media business model in Portugal, a large part of editorial teams is composed of interns and agency journalism as a cost-reduction strategy to avoid failure (Fonseca et al., 2016). That reduces investigative journalism and the pursuit of truth.

The results from the open interview/activities of the UNESCO-ESCS by a participant of she refer "In the current context of increasing civic disengagement, particularly among young people, from political participation and local democratic processes, it becomes imperative to rethink the role of higher education institutions as agents of civic education and community engagement. Higher education, especially academic chairs with pedagogical and scientific responsibilities, plays a key role in fostering a more robust, inclusive, and informed democratic culture.

With the aim of reinforcing this mission, a Citizenship Week was designed and implemented under the coordination of a university chair focused on community engagement. According to the participant "Its objective was to bring students closer to local political realities, promote critical thinking, and encourage constructive debate around municipal elections—frequently overlooked or undervalued by younger audiences, despite their direct relevance to everyday governance and community life."

The participant indeed describes all the previous activities of the UNESCO – ESCS Chair that becoming effective and approved in 2025.

The activities developed included "*An week included a diverse set of activities across educational, cultural, and political dimensions, structured around five main pillars:*

1. Thematic Reading Club session, dedicated to literary and essayistic works on citizenship, democracy, and political participation, aiming to foster accessible and interdisciplinary reflection.
2. Informative Session on the Functioning of Municipalities and Local Electoral Processes, especially targeted at students, in order to combat widespread lack of knowledge about local governance.
3. Public Interviews with Local Government Representatives, allowing for direct dialogue between students and local decision-makers, and enhancing understanding of proximity-based governance.
4. Interview and Debate with an Portuguese Political Commentator, focused on critically analyzing political participation in Portugal and the role of civic education—bridging academic discourse and political experience.
5. Documentary Exhibition, showcasing visual and informational materials on the history of local governance, electoral campaigns, and practices of active citizenship in both local and national contexts.

These initiatives aimed not only to inform but to educate, by creating a space for experiential learning, real-world engagement, and the development of argumentative and critical skills. Ultimately, it sought to consolidate the notion that higher education must go beyond the transmission of technical-scientific knowledge and also embrace a transformative civic function committed to social cohesion, democratic participation, and the sustainable development of communities.

4.5 Results from Inquiries in Classroom to Students from ESCS

Students at ESCS also were inquired during the last semester of 2024-2025 during the lectures about the use of AI in various courses in ESCS, their potential and the practical usage in academic duties, mainly in evaluation support. The inquiries were done in the form of brainstorming, including a focus group methodology, but in an "informal environment". The number of participants was 25 in Journalism and 23 in Audiovisual and Multimedia. The gender distribution was 53 females and 47% males. The average age of the students is 22 years old, with a median age of 21 years old, representing approximately 55%. The use of AI by students differs significantly between the two degrees. Most of the students 89% are from the Metropolitan region of Lisbon, and the remaining 11% are from the Azores Islands/the Algarve Region, and the Porto Region.

The use of AI by students differs significantly between the two degrees. About the frequency of the use of AI the journalism students refer mainly to short research in ChatGPT /Grok about the last news or some punctual research about specific new /or to synthesize all the information about one specific new, most of the time, as a result od special interest from student and not in academic environment/evaluation goals. They refer to the utility of the impossibility of total use in the elaboration of a comprehensive evaluation, as the software tool utilized blocks the use of AI (Identific, 2025). Most of the Journalism students report that AI is used primarily as a complementary tool during assessment moments, as most course evaluations incorporate active learning strategies, including case studies, individually presented reports, and practical assessments. The same applies to students in the Audiovisual and Multimedia (AM) degree program. The majority of the evaluation has a practical component, which involves filming, design, digital skills and practical models of evaluation, where AI was not possible to use as a complete tool. The students of AM usually use AI not to search for the required news, but more on a digital and graphical design focus as a tool in AM.

4.6 Discussion

The literature confirms that ALS are essential to addressing the challenges posed by using generative Artificial Intelligence in higher education. These strategies foster deeper learning, case studies, critical thinking, and greater student autonomy, namely by promoting their competencies that are difficult for AI tools to replicate. The reviewed research further highlights the effectiveness of flipped classrooms, project-based learning, and collaborative approaches in enhancing student engagement and content retention (Freeman et al., 2014; Prince, 2004). As highlighted in Howell's (2021) model of sustainable education, active learning and reflective practices provide not only pedagogical benefits but also a framework for designing resilient assessments in higher education.

Moreover, the studies underscore the importance of rethinking assessment models by prioritizing authenticity, personalization, and reflective thinking. This aligns with Howell's (2021) "emphasis on embedding reflection and student agency into assessment design, ensuring that learning outcomes are grounded in autonomy and deeper engagement rather than rote reproduction". Assessments that include peer review, self-reflection, real-world problem solving, and collaborative projects demonstrate greater resilience to AI misuse, as they require contextualized knowledge application and personal expression (Sotiriadou et al., 2019; Bearman et al., 2020).

The literature also refers that merely detecting the use of AI is insufficient; assessment tasks must be designed in ways that inherently challenge machine-generated responses. Therefore, the integration of ALS should be understood not only as a pedagogical approach but also as an ethical and design strategy to safeguard academic integrity (Dawson, 2020; Nicol & Macfarlane-Dick, 2006).

Finally, the literature highlights the need to align assessment design with long-term learning goals by developing transferable skills such as critical thinking, self-regulation, digital literacy, and active citizenship (Selwyn, 2019; Buckingham, 2020). In this sense, ALS not only reinforce meaningful learning but also equip students to act responsibly in an increasingly AI-mediated world. This perspective further supports Howell's (2021) argument "that sustainability-oriented pedagogies must cultivate transferable skills such as autonomy, critical thinking, and ethical responsibility, which are essential in an AI-mediated academic environment".

5. Conclusion

The rise of AI presents both challenges and opportunities for higher education. While traditional assessments are increasingly vulnerable to AI-generated content, Active Learning Strategies offer a robust framework for innovation. At the same time ALS reveals high potential to eliminate the AI plagiarism from the academic evaluation process because by embedding authenticity, collaboration, and reflection into assessment design, educators can foster learning environments that resist AI misuse and promote deeper, more meaningful student engagement. Institutions must support this transformation by investing in staff development, investment in research and development, promoting excellency, rethinking learning spaces, and promoting a culture of academic integrity. The future of assessment lies not in resisting AI, but in reimagining pedagogy to transcend it.

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Ethics Declaration: The research presented in this paper did not require ethical approval, as it did not involve human participants, animals, or sensitive data requiring consent or review by an ethics committee.

AI Declaration: The authors affirm that an AI tool (ChatGPT, developed by OpenAI) was used only to improve the clarity and fluency of the English language in the manuscript. The content, analysis, and conclusions of the paper were entirely developed by the authors. No AI-generated content was used in the conceptual or analytical development of the research.

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Appendix 1

Results from *UNESCO Chair "Communication, Media Information Literacy and Citizenship" presented by the Coordinator (Bonacho, 2025) and By UNESCO – ESCS, (2025).*

According to Bonacho, (2025) "T*he UNESCO Chair "Communication, Media Information Literacy and Citizenship" is an initiative aimed at addressing the challenges of the 21st century, a time marked by an unprecedented digitization of communication. While the benefits of digital media are undeniable, their uncritical use has led to misinformation, fake news, hatred, and intolerance. These phenomena threaten the sustainability of tolerant, inclusive, and democratic societies, where full citizenship is both a right and a duty. In this context, media education and citizenship development are essential. They allow for the construction of a diversified coalition of autonomous individuals who recognize, analyse and resist harmful forms of expression and communication. The Chair aims to integrate research and education into society to develop fundamental skills for communicating and understanding the world critically, while resisting polarization and stereotypes. The teaching and research carried out at ESCS support this chair and are at the centre of international cooperation. This includes notably the countries of the South and Lusophone, encouraging academic alliances and promoting knowledge sharing. The Chair shares the principles of UNESCO, promoting communication for inclusive, multicultural, and democratic societies. It aims to bridge the gap between academia and civil society, to develop media education, to defend freedom of expression, to fight against hate speech and misinformation, while promoting responsible critical thinking and preventing violent extremism. In addition, it aims to develop actions and projects for sustainable societies, while strengthening knowledge for climate action".(Bonacho, 2025).*

The Mission of the Chair

Communication is as much a compromise as it is the recognition of the other, both at the root of democratic societies. The XXI century is marked by the unprecedented digitalization of communication, and though the benefits of digital media are undeniable, their indiscriminate and uncritical use brought disinformation, misinformation, fake news, hatred and intolerance menacing the sustainability of tolerant, inclusive and democratic societies where full citizenship is both a right and a duty. In this context, media and information literacy and citizenship cultivation are crucial, building a diverse coalition of empowered people who recognize, analyse, and resist harmful forms of expression and communication. The chair proposal is a process of research and education integration in society to develop the fundamental skills to communicate and critically understand the world, resisting polarization and stereotyping while shortening the participatory gap that hinders engaged and well-informed citizens. (Bonacho, 2025).

Values

It sets up a critical process that empowers and engages people as global citizens, with media literacy at the heart of strategies while envisaging a culture of communication that is open, inclusive, critical and based upon respect for human rights and democracy, contributing to human development and understanding of the world.

It will work for inclusive and accessible education and promote lifelong learning opportunities for all by addressing education, general or specialized and for all ages, as an essential component of media literacy. More educated people are more informed, more aware of critical thinking and less likely to be led by disinformation and misinformation or engage in hate speeches and misogyny (Bonacho, 2025).

The actions, projects and cooperation will promote freedom of expression and the right to information, as well as combat discrimination, hate speech and gender harassment, through pursuing research projects on these and actively engage in new projects within the network of the Chair (Bonacho, 2025).

Particular attention will be paid to media literacy in digital media environments as they affirm to be a game changer on disinformation, misinformation and fake news propagation, particularly perpetrated by authoritarian and extremist movements, menacing democracy and freedom of expression, while at the same time remaining in certain regions of the world an opportunity for free information and debate (Bonacho, 2025).

It will foster knowledge and skills development in the digital and multimedia environment by preparing and supporting citizens to face the constantly changing digitization of society giving them skills grounded on creativity, critical thinking, intercultural dialogue competencies, media use abilities, and participation and interaction opportunities (Bonacho, 2025).

Objectives

- *To promote communication for inclusive, multicultural, equal and democratic societies, ensuring education and long-life learning through the creation of open and accessible digital resources and mobility exchanges among the Chair partner's networks.*
- *To develop media and information literacy by promoting freedom of speech, countering hate speech and disinformation whilst fostering critical thought and enhancing the bridge between the academy and civil society through knowledge transfer (digital and other) and cooperation activities on the domains of the Chair.*
- *To promote active citizenship and civic engagement by working for and with the communities and civil society organizations by developing actions and projects towards sustainable societies and enhancing knowledge for climate action (Bonacho, 2025).*