



MEDIA AND MATERIAL LITERACY IN EXTENDED REALITY

INTERNATIONAL
INTERDISCIPLINARY RESEARCH
CONFERENCE ON EDUCATION

BOOK OF ABSTRACTS

MEDIA AND MATERIAL LITERACY IN EXTENDED REALITY

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INTERDISCIPLINARY RESEARCH
CONFERENCE ON EDUCATION

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OPENING NOTE

This Book of Abstracts gathers the papers presented at the *Media and Material Literacy in Extended Reality, International Interdisciplinary Research Conference* on Education, held at the Faculty of Fine Arts, University of Lisbon, on 19–21 November 2025.

The full Conference Programme, including Workshops, Talks and Exhibitions, is available separately.

We thank all authors and contributors for their participation in this collective reflection on hybrid pedagogies, media and material literacies, and the expanding field of extended reality.

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INTRODUCTION

After the pandemic, educational institutions have significantly strengthened their engagement with remote and hybrid teaching and learning approaches, complementing traditional modes of instruction and reshaping educational practices, methodologies, and assessments. This transition has highlighted both the potential and vulnerability of digital technology use in education, particularly influenced by factors such as specialization, infrastructure, inclusivity, and access to digital resources.

Within this rapidly evolving hybrid educational milieu, continuous updates to educational practices are required to enhance traditional classroom experiences, through innovative design and implementation of hybrid, online, and virtual learning environments. These efforts aim to foster active learning engagement across educational communities.

Although this digital progress and impact on education, it has been an asymmetrical development, since what is thought, learned and consolidated is vulnerable due to many circumstances underpinning the educational ecosystem. It can be more or less effective depending on the school specialization, infrastructure, inclusive vocational purposes, and their access to open source digital environments. Also, the disciplinary nature of the contents, techniques of knowledge transfer, learning and assessment processes, may constantly require or not fully require the use of digital technology.

Metaverse immersion, human machine – interaction, machine learning environments, data algorithms, released actants of formal or informal training and learning environments, whether as co-creators, or co-curators and co-constructors of knowledge settings and emergent paradigms in education. In fact, considering these endless achievements and upgrades, literacy on extended materiality can be regarded as in need for all matters in the field of education.

Physical and digital pedagogies, immersive settings, synchronous and asynchronous contents, and blended activities now frequently intersect in classes, lectures, training sessions, workshops, and creative exhibitions. The landscape of education is continually reshaped by diverse resources, methodologies, contents, and materialities, both open-source and commercial. Acknowledging these opportunities and challenges related to media and material literacy and hybrid education practices forms the central theme of this conference.

We aim to explore educational principles, hybrid education models, immersive teaching-learning experiences, and their effectiveness within paradigms of inclusivity and equality. The conference will provide a platform to map, critically reflect, and rethink how educational ecosystems are responding to current challenges and opportunities.

3.1. Examination Conducted by Artificial Intelligence

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KEYWORDS:

Artificial intelligence, university, exam

ABSTRACT:

During the presentation, I will outline the course and structure of the first exam at the Jagiellonian University in Krakow, conducted before artificial intelligence. This exam concluded a yearlong (60 hours) course in the history of philosophy, and took place on June 20–22, 2025, at the Faculty of Polish Philology, within the Teacher Education program. This pioneering scientific and didactic experiment was carried out in Academia Electronica – the virtual branch of the Jagiellonian University. The project was first initiated in 2016 as the idea of a “semantic bot,” but it only took real shape after the emergence of AI in the form of ChatGPT in 2022. This made it possible in 2024 to design the exam’s structure and implement it on the Academia Electronica website, rather than in the virtual world of Second Life as originally was planned. The historical reference point for this endeavor were earlier test exams with the avatar *White Owl*, which acted as examiner in Second Life between 2015 and 2020, but without the use of AI. The current project, although no longer centered on an avatar, was enriched with artificial intelligence capable of evaluating students’ written answers.

The presentation emphasizes the importance of communication with students, who for many months awaited and were partially updated about the progress of work on the exam bot. This shared experience created a research atmosphere, grounded in trust, ethical transparency, and a sense of participation in a historic experiment. Students were fully aware that they were taking part in an innovative academic undertaking, which fostered collective engagement. Final feedback from participants highlighted the valuable nature of the experience, offering a completely new perspective on the examination process.

The examination consisted of two stages. The first stage was a traditional multiple-choice test, consisting of answering on ten randomly selected questions from a set of 100 questions. This stage could be repeated multiple times. The second, optional stage required a short written answer to a single question, selected and posed by the AI acting in the role of *White Owl*. Answers were assessed in two steps: first, the AI provided a brief qualitative assessment, and then posted an explanation of why that

assessment was given. Based on this, a final numerical grade was assigned, which could raise or lower the test grade by half a point. Out of 61 course participants, 57 (93.44%) took the exam; 34 students (59.65%) completed only the test stage, while 23 (40.35%) proceeded to the second stage and received AI assessment.

Analysis of AI evaluations showed that it was able to correctly identify key elements of philosophical concepts, highlight the strengths of student answers, and point out areas needing clarification. As a result, the system assessed responses in accordance with academic standards. Students likewise evaluated the solution positively, emphasizing its inspirational character and didactic potential, as expressed in feedback submitted after the exam.

The presentation also discusses the technical aspects of the experiment. The exam was prepared with the use of the ChatGPT-4o-mini, which had previously been tested for its trained knowledge of the history of philosophy. A crucial element was the development of a complex exam prompt, defining the AI's role as examiner and specifying the grading rules. This process extended over several weeks and required constant verification. During programming, expert-like discussions arose with the AI, for example regarding the excessive detail of certain test questions.

A key philosophical issue during the development of the bot concerned the consequences of transferring examiner competence from humans to artificial intelligence. The AI demonstrated the ability to assess knowledge accurately, suggesting its potential future use as an expert system. At the same time, this raised questions about the role of human educators and the boundaries of AI autonomy. The experiment showed that AI can credibly assess academic knowledge, which in the long run may lead to a redefinition of the traditional examination model, and a challenge to the exclusive competence of human examiners. An important issue raised in this reflection concerns the acceptance and scope of students' reliance on AI tools, both in everyday study and in examinations. The presentation suggests that restricting such practices may not be the only or even the most justified approach, since the very nature of the relationship between humans and AI is changing. Perhaps the essential challenge is not limiting access to AI, but redefining the aims of education and assessment in the era when AI achieves increasingly advanced competences as part of academic programs.

The exam conducted with AI not only tested technological possibilities but also opened up a new field for philosophical inquiry into the nature of knowledge, human and machine competences, and the future role of AI in university. This project demonstrates that artificial intelligence, when properly prepared and implemented within academic structures, can become a valuable partner in both teaching and research.

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BIO:

Sidey Myoo (prof. dr hab. Michał Ostrowicki) is my academic pseudonym, originating from the online name I adopted in 2007 in the virtual world of Second Life. I am a philosopher, working in the Department of Aesthetics at the Institute of Philosophy at the Jagiellonian University, as well as in the Department of Media Art Theory at the Faculty of Intermedia at the Academy of Fine Arts in Krakow. My interests lie in aesthetics, treated as the theory of art, mainly in reference to contemporary art, including New Media Art. Since 2003, I have been engaged in the philosophy of the Internet, studying phenomena such as immersion, interactivity, telepresence, telematics, hybridization, identity, and artificial intelligence. In 2006 I introduced the concept of electronic *realis* (later virtual *realis*), which became the basis for ontoelectronics, an ontology focused on the analysis of virtual reality. Research on virtual reality led me to the thesis that virtual reality is an alternative sphere of existence in relation to the reality of the physical world, capable of serving human existence (“Ontoelectronics. An Introduction”). I am also the creator of the theory of the work of art (“The Work of Art as a System”) and the matrix theory of art (“Wirtualne *realis*. Estetyka w epoce elektroniki”). I proposed the concept of art in virtual reality (“VR ART”) and the criterion for art (“Genetic Criterium of Art”), and within ontoelectronics, I developed nonlinear conception of truth. I am the author of articles, monographs, and edited works in the fields of philosophy, art, and online education. I have participated in national and international scientific events. In 2007, I founded Academia Electronica (www.academia-electronica.net) – the virtual part of the Jagiellonian University operating in Second Life (since 2008), also in AltspaceVR (2020-23), and in Spatial (since 2023), where I experiment with remote teaching by conducting official academic courses, featuring guest lectures by speakers from various scientific centers, including foreign ones, and where conferences are organized.