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Assessment, ethics and Artificial Intelligence

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Abstract: The spreading of Artificial Intelligence has raised ethical questions about its use and implications. In the field of education, the impact of the use of AI and the ethical issues concerning the assessment practices are noteworthy. At this end, the paper intends to analyse the ethical issues of AI-assisted assessment and its impact on the learning process and the teacher's role. Many studies and essays discuss the ethics of Artificial Intelligence but, in the literature, there is a lack of evidence debating the relation between Artificial Intelligence and educational assessment. The AI act mentions the risks of unethical use of AI in general and for educational assessment as well. Furthermore, Chatgpt was asked to list the main ethical issues and how to solve them. New AI-assisted assessment possibilities could represent a big change in education. AI can support the teacher in educational decision making, provide adaptive teaching strategies, and support their professional learning. The teacher's support for the use of AI in the classroom has a critical influence on learning and may significantly affect motivation and competence to learn. However, in the end, human thought and action are necessary and indispensable to produce the highest achievements in the AI assisted assessment practices.

Keywords: Artificial Intelligence; ethics; assessment; education.

1. Introduction

Artificial Intelligence (AI), not only in relation to assessment but yet in itself, is considered a new technology able to put at risk the entire humanity. In the age of the new digital revolution, caused by the spreading of artificial Intelligence, the questions about the ethics of assessment become even more complicated. Artificial Intelligence is more and more used and it also reproduces human assessment (Gardner et al., 2021), especially in formative assessment (González-Calatayud et al., 2021). Assessment and Artificial Intelligence are both deeply linked to ethics. Even before the spreading of Artificial Intelligence, assessment has always been considered a social act with crucial etic impact (Moro, 2024).

[1] The article is the result of a joint collaboration between the authors. However, Delio De Martino wrote the paragraph 2,1, Maria Clara Dicataldo paragraph 2,2, Andrea Tinterri paragraph 3, Anna Dipace paragraph 1.

Assessment is intended not only as the final summary check of the learning but also as a natural extension of the learning process that follows the same trajectories of the educational design (Bonaiuti & Dipace, 2021). Furthermore as Barni (2005) wrote, the assessment is per sé «*uno strumento di promozione individuale, ma anche di selezione moralmente accettabile solo se non prescinde dall'equità ed è anche garanzia di convivenza e integrazione fondata sui valori, costituzionalmente definita*». The docimology (as science of assessment), which is historically connected to the psychometry, has been considered a crucial phase of the learning process and a very delicate moment for the teacher and for the student. Assessing a student is not a mechanical operation but an act that has a huge social, psychological and emotional impact and it also regards social justice. In last decades the transition from the testing culture, where the act of grading was seen as separate phase respect to the educational process, to the assessment culture, where, indeed, there presents a strong link between the learning process and the assessment, underlines the responsibility of the teacher for the assessment consequences (Bonaiuti & Dipace, 2021).

Literature offers a variety of examples regarding the heavy impact of the assessment in case of a negative mark. The Italian novel *Il Giardino dei Finzi Contini* by Giorgio Bassani describes in depth the emotional and psychological breakdown of the protagonist after a negative grade at the end of the school. During the '900 the awareness of the difficulty to provide a fair assessment increased. In this scenario, it is noticeable the case of Alberto Manzi in 1981 who refused to fill out the assessment sheets of a classroom of socially disadvantaged children. Furthermore, the famous tv presenter of the show *Non è mai troppo tardi* put at risk his career, as teacher and presenter, because he was considered to be neither ethical nor inclusive when he refused to assess students with special needs. When he was forced to fill in the assessment sheets he wrote to all children the same phrase «*fa quel che può quel che non può non fa*» (Sabatano, 2023).

In the present scenario, with AI fastly spreading all over the world and affecting almost all the fields of human life, it is necessary to analyse its ethical implications with specific reference to the field of education and related assessment practices (Bearman, & Ajjawi, 2023; Boubker, 2024; Ojha et al., 2023).

The present study intends to provide a theoretical background able to answer the following research questions:

1. What are the ethical issues to consider when using AI in the educational assessment?
2. How does the use of AI assisted assessment affect the learning process and the role of the teacher?

2. Discussion

2.1 AI, ethics and assessment

As it usually happens in front of a new disruptive technology, the word is divided into «*Apocalittici e integrati*» (Eco, 1964). Since 2022, when Open AI released ChatGpt, the *querelle* about the risks and the opportunities of AI has produced many studies and essays about the ethics of Artificial Intelligence. *Etica dell'intelligenza artificiale* by

Luciano Floridi (2022), may be one of the most equilibrate texts to analyze the ethical implications of AI without neither an excessive enthusiasm nor an apocalyptic perspective. Even though there are many studies discussing general ethical issues, there is a lack of evidence debating the relation between Artificial Intelligence and assessment in education. In general, the main concerns involve the risk of a «*dittatura dello script*» (Panciroli & Rivoltella, 2023; Pasta, 2023) and the threat of a digital standardization in fields where the human critical mind is pivotal.

In the enormous mare magnum of ethical reflections, *The AI act* issued by the European Union reflects the most relevant current ethical issues and discourages the non-ethical uses of AI. Although there is a general lack of pedagogical focus, the document mentions the risks of unethical use of AI for educational assessment (De Martino et al., 2024) which is considered to reach the highest level of risk (unacceptable and high risk). Article 5 "Prohibited AI practices", in fact, refers to some forms of AI assessment that could lead to inhuman, almost eugenic, forms of exclusion of students. Furthermore, clause F of the same article is aimed to prohibit the assessment of the emotions linked to a discriminatory practice and "unfavorable treatment of students" caused by AI assisted assessment.

"the placing on the market, the putting into service for this specific purpose, or the use of AI systems to infer emotions of a natural person in the areas of workplace and education institutions".

The private sphere of emotions, considered nowadays more and more important in the learning environment, (Pekrun & Linnenbrink-Garcia, 2014) should not be open to assessment practices in the school or university in order to avoid crossing the border of intimacy.

Finally, Annex III of the document mentions different types of high-risk AI systems:

Education and vocational training:

a) AI systems intended to be used to determine access or admission or to assign natural persons to educational and vocational training institutions at all levels;

b) AI systems intended to be used to evaluate learning outcomes, including when those outcomes are used to steer the learning process of natural persons in educational and vocational training institutions at all levels;

c) AI systems intended to be used for the purpose of assessing the appropriate level of education that an individual will receive or will be able to access, in the context of or within educational and vocational training institutions at all levels;

d) AI systems intended to be used for monitoring and detecting prohibited behaviour of students during tests in the context of or within educational and vocational training institutions at all levels.

In these lines the concerns are about the automated student assessment that may lead to discrimination at "all levels" like the evaluation of students' access to education,

learning outcomes, educational level, and the excessive monitoring in the learning environment.

In addition, to have a general overview of the ethical issues of the use of AI for the assessment we have asked an opinion to Chat Gpt (free version, 2-1-2025) using the following prompt: "Which are the most relevant issues related to the use of Artificial Intelligence in the pedagogical assessment?" [2] (Tinterri et al., 2024). The answer proposed 16 ethical issues grouped in 5 categories that are: "Ethical Issues", "Technical Issues", "Practical Issues", "Pedagogical Concerns", "Ethical Use of Results".

The "Ethical Issues" category includes issues related to "Bias and Fairness," relating to the possibility of perpetuating or exacerbating errors in evaluation if AI is trained with data that contain errors. In computer science terms, this mechanism is referred to as "garbage in garbage out" (if you train the AI with garbage, the result will be garbage (Panciroli et al., 2020) and is associated with lack of transparency. AI models are a kind of "black box" trained with a huge amount of unknown text that is likely to inherit errors and biases. Another issue belonging to this category is that of privacy which, in Italy, led to the temporary blocking of Chat Gpt due to the lack of transparency in data collection, especially from minors (Croari, 2023). In addition, the issue of "Fairness" refers to the digital inequalities that may arise in the access to the technologies required for AI assisted assessment.The category of "Technical Issues" concerns: the choice of "high quality data" for high quality evaluation, "adaptability" to a variety of educational contexts, and "overconfidence" in evaluating AI. In addition to "Practical Issues" (including implementation costs, teacher training and resistance to change), Chat Gpt showed the category more specifically related to the educational field, that of "Pedagogical Concerns." In this category we can read perhaps the most crucial issue entitled "Holistic Evaluation": indeed AI focuses on measurable data but leaves out lots of crucial elements such as creativity, collaboration, emotional intelligence, and critical thinking. The reality is barely translatable into analyzable data by the AI because of the complexity of the human factor that is essential and not easily delegable to AI. The "Pedagogical concerns" also include the "Student agency". The AI overuse could impact on the metacognitive skills of the student and their ability to self assess and reflect on their learning process. The last issue is related to Feedback Quality: the "depth and personalization" of AI assessment could not be qualitative as much as one of a skilled teacher. In the last category "Ethical Use of Results" Chatgpt reports as problems the "lack of accountability" in decision making and "Misuse of Data" in ways that could damage the students.

After asking ChatGpt "How ethical issues can be solved?", the answer provided 8 strategies:

- Mitigating Bias and Ensuring Fairness (through Diverse and Inclusive Training Data, Algorithm Audits and Fairness Metrics);
- Enhancing Transparency (through Explainable AI, Open Communication, Documentation);

[2] Due to the stochastic nature of Chat GPT, it is known that Chat GPT responses may vary from user to user or from chat to chat.

- Safeguarding Privacy (through Data Minimization, Anonymization Compliance with Regulations);
- Promoting Equity (Access to Technology, Inclusive Design, Subsidies and Support);
- Respecting Human Oversight (Teacher Involvement and Hybrid Models);
- Accountability Mechanisms (Clear Responsibility, Dispute Resolution, Regular Monitoring);
- Educating Stakeholders (Teacher Training, Student Awareness, Parent Engagement);
- Ethical Governance (Ethical Guidelines, Independent Oversight, Global Collaboration).

2.2 AI assisted assessment in education

The application of AI in education can offer a number of benefits in classes including personalised learning, adaptive assessment, feedback to students, adaptability and interactivity, human–machine conversations and predictive analytics (Celik et al., 2022; Chiu et al., 2023). Teachers have proposed AI learning approaches that integrate interdisciplinary learning, authentic problem solving, and creativity tasks Kim et al., 2022). The fact that generative AI tools are able to provide high-quality responses to a wide range of common educational tasks has questioned the way of teaching and assessing students, making it necessary to examine teachers' beliefs about how teaching and assessment will need to change in response to generative AI and their motivation to change (Bower et al., 2024).

In the technologically advanced present era, traditional pedagogy and its assessments are likely to not remain the same. New AI-assisted assessment possibilities could represent a big change in education. AI assisted assessment obviously differs from traditional assessment. Traditional assessment concerns distinctive and unusual artifacts that generally come at the end of a period of instruction (i.e. high stakes test) by retrospectively judging each learner's ability to recall. AI-enabled assessment, instead, provides recursive feedback systems that are an integral part of the whole learning process itself. The dataset evaluated includes all recordable interactions with computer-mediated content resources, peers and teachers. Furthermore, learners and teachers can access incremental progress monitors that support customized or adaptive learning pathways representing a transformative way of doing education. AI enabled embedded assessment tools include: intelligent tutoring systems; log file and clickstream analyses that predict learner success; games and simulations that capture and interpret incremental moves on-the-fly; text mining that reads into students' writing or speaking in natural language for possible semantics; and computer-managed peer assessments (Cope et al., 2024).

AI may support teachers in assessment processes through: construction of assessment questions, providing writing analytics, automated use of learning process data, adaptive and personalized assessment, automated grading and evaluation of papers and exams, evaluation of student engagement and academic integrity, process oriented assessment and evaluation of collaborative performance (Bower et al., 2024).

However, there are also a range of challenges and concerns when using AI in assessment: the sidelining of expertise, deferral of accountability, adoption of surveillance pedagogy, a potentially unproductive separation of humans and machines in the assessment process (Swiecki et al., 2022), identity, plagiarism, and assurance of learning (Bower et al., 2024). The fact that a student can pass an assessment test by submitting an assignment realized by AI represents a serious danger for the education. Even though many AI detection tools have been developed to tackle such problem (i.e. AI Text Classifier, GPTZero, AI Cheat Check, AI Content Detector), they represent a probabilistic rather than exact solution (Cotton et al., 2024). Furthermore, it is of fundamental importance for educators to know its intrinsic limitations relating to the transposability of human meanings into numbers. Computing machines are able to accomplish surprising things but they are nothing more than tools that need the establishment of collaborative relations between humans and their tools of calculation to succeed. Human thought and action is still necessary and indispensable to put into practice and understand systematized knowledge and their media of representation (Cope et al., 2024).

In general, AI can support the teacher in educational decision making with evidence, provide adaptive teaching strategies, and support their professional learning. The teachers' support for the use of AI in the classroom has critical influence on learning and may significantly affect motivation and competence to learn, on the other hand the adoption of passive approaches when using AI may actually lead to reduced performance (Bower et al., 2024). Thus, it is necessary to understand the teacher's role when helping students to learn with AI. When using AI teachers have to account for reliability, capacity, and applicability of AI, adopting the use of eXplainable AI (XAI) for which the decisions made by AI are transparent and available (Khosravi et al., 2022). Despite teachers' awareness of the many benefits and opportunities coming from the use of AI in the classroom, many of them do not know how to effectively employ it or have no motivation to do it. There is a need for further exploration of educational approaches to applying AI in education (Bower et al., 2024).

3. Conclusion

AI presents various risks but undoubtedly advantages as well. In order to benefit from them the most, the key is given by finding the right balance between the human and the machine action. It is necessary to think about an anthropocentric AI assisted assessment that adopts a hybrid model combining both human and machine perspective and not giving the machine the entire responsibility for an action. The lead of assessment should remain in the hands of the teacher, avoiding an impersonal assessment driven by an algorithm and by a neither transparent nor neutral software.

According to a reflection of Floridi (2022), the most general risk in the AI assisted assessment, in a long term perspective, is to overturn the roles of the AI and the learning environment. The risk is that we are going to embrace the world to turn it into a suitable place for AI, and in the specific educational field, to turn the learning environment and the learning process into a suitable place for the AI enhanced assessment systems. The threat is to reduce the complexity and the richness of the learning process, that includes an incredible variety of elements barely accessible to AI, adapting it to assessment capacities, sacrificing the most high value human factors,

from creativity to critical thinking, to collaboration to enthusiasm to deep human feelings. In Nietzschean terms, we would call them Apollonian and Dionysian education (Steel, 2014).

To ensure the ethical use of AI assessment systems, the collaboration of all education stakeholders at all levels (macro, meso, and micro systems) is essential to prevent the human factor from being cut out. Pedagogues, teachers, policymakers, software engineers, students, families, and society should collaborate in a joint effort to avoid any dark AI-centric scenario akin to Orwellian 1984.

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