Reflective Perspectives on Generative AI in Education:
High School Teachers' Insights on Tasks, Benefits, and Harms

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Directions for the responsible design and use of Artificial Intelligence (AI) in the field of Education are converging towards a perspective centred on the rights of the child (Hernández-Leo, 2022). This perspective calls for caring about a tension between the right of provision (effective opportunities to learn the right skills and knowledge), the right of protection (e.g., privacy, digital wellbeing, trust), and the right of participation (stakeholders agency and involvement in the design). Indeed, generative AI—a type of AI capable of creating content—presents both opportunities and challenges in education, vividly exemplifying this tension (Chiu et al., 2023). Involving teachers (Chounta et al., 2023) in the design process of GenAI-supported learning tasks and in reflecting on its impact on educational and ethical values (Gerdes & Frandsen, 2023) offers an opportunity to face this tension.

We have studied how ten teams of two to three high school teachers in Catalonia designed potential tasks for their students to learn using Generative AI in the spring of 2024. After completing the design, teachers had the opportunity to reflect on an open list of values related to potential benefits of their design and to the potential harms. Both the design and reflection were collected in design templates ensuring a comprehensive understanding of each team's perspectives. The qualitative data was analysed both qualitatively and quantitatively. The analysis involved coding the data for recurring themes related to benefits and harms, quantifying the frequency of each mentioned theme to ascertain prevalent views and concerns. This method allowed for an aggregated view of the advantages and challenges perceived by educators.

The ten teams of teachers proposed potential integration of Generative AI tools into diverse educational activities aimed at enhancing student engagement and learning outcomes. These tasks range from utilizing AI for personalized spelling and grammar exercises to facilitating deeper literary and historical analysis. For instance, one team employed AI to help students identify and correct their specific linguistic errors. Another group of educators used AI to simulate interviews with historical figures, providing students with a dynamic way to explore historical contexts and think critically about historical narratives. Additionally, the use of AI was proposed to create and analyze literary content, which allowed students to engage with narrative structures and develop creative writing skills through AI-generated prompts and feedback. Other tasks included using AI for collaborative group projects, such as analyzing modern music lyrics and performing theatrical representations of literary works, thereby fostering teamwork and critical thinking. Some tasks were designed to enhance digital literacy, like navigating AI-generated news dossiers to discern factual from false information, while others focused on creative outputs, such as composing poetry in specific historical styles with the help of AI. Each task aimed to leverage AI's capacity to generate content, provide feedback, and simulate scenarios that are otherwise challenging to create.

In the reflections on the use of Generative AI tools by the ten teams of teachers, efficiency and effectiveness of learning processes are the most highlighted benefits, mentioned in 7 teams' reflections. Personalization of learning experiences, which cater to individual student needs and skills, is noted by 5 teams as a major advantage. The capacity of AI to enhance creativity and engagement is also emphasized by 5 teams, reflecting the tool's ability to make learning more interactive and enjoyable. Furthermore, time savings for teachers in preparing materials and managing classroom activities are recognized by 4 teams.

Conversely, the reflections reveal several concerns about the harms associated with the integration of AI in education, highlighted across various aspects. Privacy and data security issues are the most commonly noted costs, mentioned in 5 teams' reflections, driven by worries about the handling and potential misuse of student information. The potential for AI to reinforce existing biases is another significant concern, highlighted by 4 teams, particularly in the context of automated content generation which might not adequately represent diverse perspectives. Environmental impact, mainly due to the energy and water consumption of AI technologies, is mentioned by 3 teams. Other costs include the possible neglect of handwriting and traditional learning methods, cited by 2 teams, reflecting a concern about the over-reliance on digital tools.

These reflections illustrate the complexity behind responsible decision-making when designing and using AI to support learning. Despite the clear benefits, some teams were unsure whether the potential harms could surpass the benefits. They wondered how, with careful management and ethical considerations, the benefits of AI could substantially outweigh its drawbacks. Future research and practice should seek answers to these questions and identify the best possible strategies that maximize the provision and protection of the child, while ensuring the participation of stakeholders in the design process, including children and their communities.

References

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