

AI, EMOTIONALITY, EMPATHY AND CHILDREN'S LITERATURE: ON THE VERGE OF NEW EDUCATIONAL HORIZONS

AI, EMOTIVITÀ, EMPATIA E LETTERATURA PER L'INFANZIA: ALLE PORTE DI NUOVI ORIZZONTI EDUCATIVI

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ABSTRACT

Technological innovation in education requires a deep understanding of emotions and human interaction, particularly when developing emotional AI-based educational tools and resources. In this context, children's literature can play a crucial role in providing learners with an emotionally engaging and formative experience, and this article aims to reflect on its use to foster a holistic approach to education in the digital age.

L'innovazione tecnologica in campo educativo richiede una profonda comprensione delle emozioni e dell'interazione umana, in particolare quando si tratta di sviluppare strumenti e risorse didattiche basate sull'Emotion AI. In questo contesto, la letteratura per l'infanzia può svolgere un ruolo cruciale nel fornire ai discenti un'esperienza emotivamente coinvolgente e formativa e questo articolo intende riflettere sul suo utilizzo per favorire un approccio olistico all'educazione nell'era digitale.

KEYWORDS

Emotional AI; educational technology; children's literature
Emotion AI, tecnologie educative, letteratura per l'infanzia

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Introduction

Storytelling has been an integral part of human culture and communication since antiquity and has helped to transmit knowledge, values and experiences across generations. Since the time of Homer, storytelling has proven to be the most effective way to engage listeners/readers and has always had moral and pedagogical implications (think of Greek myths or Aesop's fables). With the advent of modern pedagogy, children's literature has proven to be a particularly effective tool, enabling educators to capture students' attention, simplify complex concepts and facilitate a deeper understanding of even cognitively and emotionally tricky topics. Therefore, today, storytelling is recognised as a potent educational tool capable of involving learners and facilitating comprehension; it enables the imagination to be developed and events and emotions to be experienced, even quite strong ones, in a privileged and safe space and, through the reader's identification with the protagonists of the stories, it enables them to step into the shoes of the other, fostering empathy and helping to combat stereotypes (Bruner, 1988, 1996, 2006; Cambi, Piscitelli 2005).

Advances in artificial intelligence (henceforth referred to in the text as AI) have garnered increasing attention in all potential use fields, and education is no exception. Indeed, integrating AI in education is proposed as a tool that opens up new avenues for improving teaching and learning experiences. Among the various applications of AI in education, ranging from optimised programme management tailored to the needs of students to an Emotion AI approach used to provide personalised feedback and detect states of anxiety or stress in students, AI-generated storytelling stands out as a promising tool for educators to increasingly engage students and personalise learning to the needs of the individual. With the advent of AI, the landscape of storytelling in education is on the threshold of an evolution: indeed, the integration of AI with children's literature offers the possibility to improve educational practices by harnessing machine learning algorithms to create, adapt and customise narratives according to the needs of individual learners (Andreson, Smith 2019; Sánchez, Wiley 2016).

This article explores the intersection of AI and storytelling in education, delving into the theoretical foundations, practical applications and implications for teaching and learning. Specifically, it analyses how AI-generated storytelling can enhance traditional educational methods, promote creativity and respond to different learning needs by personalising content and enjoyment. A final reflection is made on the ethical considerations, challenges, and future directions of integrating AI-generated storytelling in educational contexts and the inevitable questions it brings with it.

1. Theoretical framework

Regarding the current state of the use of AI in the field of education, a glance at books, academic articles and research papers published in peer-reviewed journals dealing with the topic reveals a particular interest in the exploitation of AI not only in scientific-medical fields but also in the field of education (Crompton, Burke 2023; Zawacki-Richter et al., 2019). About AI applied to storytelling, most studies seem to emphasise the effectiveness of the tool in customising storytelling experiences according to students' preferences, abilities and learning styles, which leads to greater learner engagement with positive cascading effects both in the area of learning and in the approach to teaching in general (Engaged students are 2.5 times more likely to say they get excellent grades and do well in school, and are 4.5 times more likely to be confident about the future than their actively disengaged peers. Gallup Student Poll <https://www.gallup.com/education/244022/school-engagement-talk.aspx>). Drawing on theories of learning, cognition and narrative, it is possible to conceptualise the role of AI-generated narrative in education by identifying a new space in which it would fit, connected as it is with all these areas of study. Looking at the situation through a lens that includes the theories of cognitive psychology and constructivist learning (Vygotsky, 1978), which emphasise the active construction of knowledge through social interaction and experience, it is possible to state that this new tool by presenting information in an engaging and easy-to-understand narrative format and using machine learning algorithms to create narratives tailored to the individual learning needs of learners can catalyse knowledge acquisition and meaning-making by engaging learners in narratives that resonate with their interests and experiences, stimulating their curiosity, fostering critical thinking and promoting more profound engagement with society (Calabrese 2009). Using AI to create specific narratives can generate compelling stories that adhere to established narrative conventions while incorporating elements of interactivity and personalisation designed around the needs and tastes of the individual (Liang, Wang 2021).

2. Practical applications

The practical applications of AI in education demonstrate a distinct versatility in different disciplines and learning environments, from interactive storytelling apps that adapt to the responses of individual learners to virtual tutors that provide personalised feedback and guidance (Baldini 2019). AI-generated storytelling shows enormous potential in enriching educational experiences; it could already be

incorporated, albeit with all the difficulties involved, into existing curricula to complement traditional teaching methods, promote collaborative learning and support students with different learning needs. By harnessing the power of AI to create dynamic and engaging narratives, educators can create privileged learning environments that inspire curiosity, creativity and exploration. Furthermore, narratives can be tailored to individual learning needs, allowing students to explore concepts at their own pace and in their way, providing additional resources and personalised support (Di Donato 2024). To this end, teachers, for example, can configure AI to create virtual tutors that provide students with personalised feedback and guidance, helping students navigate complex concepts, identify areas for improvement and monitor their progress over time. By analysing students' interactions with the content of the proposed narratives, teachers can also gain valuable insights into their learning preferences and adapt teaching strategies to their individual needs, tweaking them to create engaging and immersive learning content that captures students' attention and fosters more profound learning experiences (Anderson, Smith 2019). Obtaining information about an individual's learning preferences also allows educators to shape alternative teaching strategies and create more inclusive and effective learning environments for all students (Cesaretti 2021). A final practical consideration concerns integrating AI-generated storytelling tools into existing educational settings, as teachers may need training and support to effectively incorporate AI technologies into their teaching practices and maximise the benefits of AI-generated storytelling for student learning (Messina 2024).

3. Implications for pedagogy

Integrating AI-generated narratives into educational practices has far-reaching implications for pedagogy, causing educators to reconsider their approaches to teaching and learning. There is a need to rethink education by going even beyond Dewey's pedagogical activism in order to adopt teaching strategies that are even more student-centred and based on the enquiry, in this case also inner enquiry, of the student, strategies in which students actively co-create knowledge and contribute to the construction of meanings (Dewey 1957;1974).

Another aspect to consider is the potential of AI-generated narratives to facilitate interdisciplinary learning experiences in which students can explore complex topics from multiple perspectives and engage in authentic problem-solving activities. This offers enormous potential from a learning perspective and relieves educators of a

rather large workload in favour of another workload, which is less heavy but more complex. With the use of AI, educators must become facilitators and curators of AI-generated storytelling experiences, guiding students through the creation of meaning through reflection, cultivating a culture of lifelong learning, fostering creativity and innovation, and ultimately rethinking not only their role within the class group but the role of educators themselves (Sancassani 2023).

4. Challenges and future directions

While AI-generated storytelling has excellent potential to enhance teaching and learning experiences, it also raises important ethical issues that must be addressed. Indeed, there are multiple moral implications of using AI algorithms to create and disseminate educational content: privacy, data security, algorithmic bias, and possible censorship of sensitive or taboo topics. In addition to these more pressing and immediately perceptible issues, there are issues related to ensuring that AI-generated storytelling experiences are diverse, inclusive, representative of different perspectives and backgrounds, and respectful of various cultures (Ohler 2013; Johnson et al 2019). The role of the educator becomes more complex as he or she is no longer limited to autonomously applying a pre-established, government-approved curriculum. However, the educator finds himself or herself having to be increasingly vigilant in critically evaluating AI-generated content for accuracy, relevance, and authenticity and proactively mitigating the potential risks and challenges that this new way of teaching brings (Cesaretti 2021).

By promoting open dialogue and collaboration between care professionals, students, developers and policymakers, it is possible to ensure that AI-generated narratives in education meet ethical standards and promote the well-being of all learners. Indeed, the scalability and accessibility of platforms must be ensured to ensure equitable access to quality educational content for all students; teachers need to consider the diverse needs of their pupils and harness AI technologies in a way that promotes inclusivity and diversity in the classroom. Despite its potential benefits, the widespread adoption of AI in education is not without its challenges and barriers to this implementation: technological limitations and the limits of available resources are among the first issues to be addressed, but there is also the possibility of widespread resistance to this process of change that aims to revolutionise education as a whole. A widespread and structured learning system as we have presented it, moreover, inevitably requires a constant effort to ensure continuous research and development to advance the capabilities of AI algorithms,

but also constant training of care professionals that, in a life-long learning perspective, can guarantee a dynamic response to changing conditions (Pellas 2023).

Looking to the future, it is possible to envision a school in which the use of AI will become seamlessly integrated into educational practices, improving student learning outcomes, stimulating creativity and promoting lifelong learning; however, realising this vision will inevitably require concerted efforts by educators, researchers, policymakers and technology developers to address the technical, ethical and pedagogical considerations alluded to above.

Conclusions

AI, specifically assisted storytelling in children's literature, promises to revolutionise education, offering new opportunities to engage students, personalise learning experiences, and foster creativity. There are many questions about its use, not only of a technical nature but also of an ethical and philosophical one. On a practical level, the realisation of a project that would seem straightforward in its design and implementation is instead an ambitious challenge since it requires collaborative efforts on the part of all the agents involved and a considered implementation that takes into account all the constraints related to privacy, moderation of topics, improvement of algorithms and, most importantly, adequate training of the educators who will have to use these tools. Although initially enormous, the use of economic and human resources promises a net saving in the long run while providing an unprecedented propulsion in the quality of learning processes by creating inclusive, innovative and transformative educational experiences for all students.

Despite all the questions this new teaching methodology poses, its potential is undeniable. It is likely to be the greatest challenge facing educators in the new millennium in the near future.

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