

# THE ROLE OF AI IN EDUCATION: EXPLORING CREATIVITY THROUGH CHATGPT

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## Introduction

In the 2001 Spielberg film *AI*, set in the 22<sup>nd</sup> century, an artificially intelligent child, capable of experiencing emotions such as love, is given to a couple whose human son has been placed in suspended animation. When the real child returns home, the AI copy is sent away. Two thousand years later, when humanity has been finally destroyed, the AI child is used as a source of knowledge about humans. Here, 'the machine outlived humanity, but machines still need humans (or as close as possible to human) to understand feelings and emotions. The relationship between humans and machines is a necessary part of living in the 21<sup>st</sup> century' (Layton, 2022). We live in an age where it is possible to retrieve masses of information from the World Wide Web through a complex network of exchanges between artificially intelligent machines. Whilst we may never reach the dystopian world view of Spielberg's *AI*, artificial Intelligence is set to revolutionise all aspects of life, including education. Bill Gates (2015) is amongst many who predict that AI will have a largely negative impact on humanity, whilst Bernard Marr (2021) regards AI as presenting new opportunities for collaboration and creativity.

For education, which has been largely absent from policy conversations (Schiff 2022), platforms such as ChatGPT present an opportunity to explore this creativity although this does not come without problems. First, ChatGPT, like most things on the Internet, collects data from its users. Without this constant mining of data, it can never become anything more than an archive of information collated by humans and, with humans, comes bias. Second, there are ethical implications to consider. As we use ChatGPT, we are contributing to these data as a form of free labour. If we can overcome these predicaments, ChatGPT could become a creative partner and a critical friend for the creative arts. Writing from the perspective of theatre and performance educators and, drawing on principles of creativity, we argue in this chapter that ChatGPT is a force for good in education. In doing so, we suggest ways in which AI can be used by students and educators to explore creativity.

Artificial Intelligence (AI) is defined as:

[T]he science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable. (McCarthy, 2007, p. 2)

Rather than having negative implications for education, AI can be used positively to enhance learning through creativity. As AI continues to develop, warnings are seemingly issued frequently, often relating to academic integrity, presenting AI as a threat to effective learning and assessment. In viewing it with such suspicion, however, opportunities might be missed for AI to be used positively. Instead, generative AI systems such as ChatGPT should be considered as a creative collaborator, much in the same way that one might work with a human to generate creative work. In the field of theatre and performance education, the notion of collaboration is essential in a range of contexts. For example, in most Performance-based programmes students work together which often results in a shared assessment. The COVID-19 pandemic accelerated changes in education practices and, alongside a rise in online delivery in the university sector, new technologies have been utilised to find innovative ways of engaging students in learning. Creative practices which focus on using digital skills in Higher Education have been well-documented (see Webb & Layton, 2023a; 2023b), reflecting the kind of work using technology undertaken in the creative industries more broadly (see Sermon et al., 2022; Chatzichristodoulou et al., 2022). Like the emergency response by theatre makers to the lockdowns of 2020 and 2021, where performance moved online and broadcast using

accessible platforms such as Zoom in innovative ways, a similar response may be required to the way in which AI is received.<sup>1</sup>

### **Theatre and technology**

Technology, defined in the sense of new innovations or ways of working, has always had an influence on the theatre. Beginning with a single actor before introducing a chorus, the ancient Greek's quickly realised that staging effects could enhance the performance. Despite it being little more than a stage on wheels, the eccyclema enabled new scenes to be transported onto a stage with ease. In the English Medieval Mystery plays of the Middle Ages, 'pageant wagons' were used to move scenes around as well as creating elevated positions for the actors. When indoor lamps became the latest innovation, this technology moved theatre audiences from outdoor theatres such as The Globe to indoor playhouses like Drury Lane's Theatre Royal. In the early nineteenth century, when lime started being used to illuminate the stage, technology was literally, to use a theatrical phrase, in the limelight. Innovations throughout the twentieth century introduced strobes, movers, LEDs, and many other tools enabling new effects. Theatre and technology, then, have always operated together; something demonstrated most recently by the industry's response to the pandemic.

### **Reconciling with technology**

In *Modern Times* (1936), where Charlie Chaplin plays an assembly line worker, he is instructed to test a 'feeding machine' as part of a drive for efficiency. Although Chaplin initially keeps pace with the invention, the machine soon takes over and the human inventors have lost control. In a similar way to Chaplin's fictional machine, the drive for Socialist Realism of 1920s Soviet Russia, led theatre director Vsevolod Meyerhold to develop his system of Biomechanics as a reaction against the Naturalistic style of Stanislavski. In Meyerhold's approach, an actor's body interacts efficiently with a stage set through a series of etudes, such as in his production of *The Magnanimous Cuckold* (1922). In this sense, the human actor and mechanistic stage set work together creatively; to remove either element would be to produce a different effect. Certainly, for Stanislavski who was concerned with truthfulness on stage, this collaboration between human and technology might create an unnecessary tension. The struggle between humans and technology is highlighted in Elmer Rice's 1923 play *The Adding Machine*. In this play, Mr Zero – an accountant – learns he is being replaced by an adding machine, causing him to kill his employer in anger. Whilst this example is an extreme response to the dominance of technology, it neatly illustrates its pervasiveness in modern life.

Despite any tensions, theatre and technology have always worked in collaboration with humans, whether through fly towers, trap doors, lighting, or sound; all ways of enabling the actor to achieve more than their corporeal limitations allow. Audience expectations of big budget effects has driven the mega-musical, exemplified by the barricades and helicopter found in *Les Misérables* and *Miss Saigon* respectively. When Lloyd Webber's *The Phantom of the Opera* opened in 1986, its crashing chandelier was a spectacle made possible only by technology and was part of a trend across musical theatre, where spectacular effects are relied upon, perhaps vying for attention with blockbuster films (see Baugh 2014). This drive for innovation in stage design and effects is nothing new and, in the early twentieth century it was Edward Gordon Craig, who proposed that uber-marionettes should replace human actors. Whilst Craig's vision remains proved unfulfilled, Virtual Reality (VR) has been used on stage in the twenty-first century, such as in the Royal Shakespeare Company's production of *The Tempest* (2016), where Ariel appears as a digital avatar.

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<sup>1</sup> Some innovative examples of this include *The Show Must Go Online*, which staged weekly online performances of Shakespeare's plays using Zoom and YouTube to live broadcast (<https://robmyles.co.uk/theshowmustgoonline/>) and Creation Theatre's work (<https://creationtheatre.co.uk>).

## AI, Creativity, and Performance

Creativity is not, of course, simply about activities such as performing, painting, or writing; nor is it concerned with the proficient demonstration of skills. Creativity can happen when someone sows flower seeds, solves a problem, or uses raw ingredients to create a new combination of flavours. Some, like Ken Robinson (2016), argue that creativity is an essential component of learning and should be integral to formal education systems, whilst psychologist Mihaly Csikszentmihalyi advocates for creativity as a means of personal enrichment. For Csikszentmihalyi, creativity 'does not happen in people's heads, but in the interaction between a person's thoughts and a sociocultural context. It is a systemic rather than an individual phenomenon' (1997, p. 23). Interaction with AI, then, changes a creative process. Runco and Jaegar (2012) offer a 'standard definition' of creativity, which 'requires both originality and effectiveness' (p. 92), whilst Hoffman et al (2016) highlight the relatively underexplored area of digital creativity. There is, however, a long tradition of using digital technologies in artmaking processes such as telematic performance, in which AI in its broadest sense (Internet, computer-computer interactions), has been important. For example, Roy Ascott's work, beginning in the 1960s, offers 'perceptive insights into the past, present and future implications and possibilities of human-machine relationships' (Shanken, 2003, p. 2). This pioneering telematic performance practice of Ascott is prescient when considering human-machine relationships such as AI.

Ascott's and others' digital work illustrates how everyday forms of AI profoundly impacts the ways in which performance, increasingly, is made in the twenty-first century. Working *with* such technologies is, as we argue later in this chapter, means embracing all they have to offer, including AI. In *The Sadness of the Machine*, Ollivier Dyens suggests that humans have come to use technology as 'memory machines' which has implications beyond work and industry, such as in recreational activities like running where devices such as Garmin watches 'become a conduit through which memories pass and are stored until reawakened by [...] viewing of the data' (Layton 2021, p. 218). By entrusting 'our memories, rather than the ability to remember, to our machines', we increasingly come to rely on technology; AI is a major part of our world and looks set to grow exponentially as we off-load 'our phenomenology onto technology' (Dyens 2001, p. 36). We will continue to live surrounded by technology, which 'has built the house in which we all live [and] [c]ompared to people in earlier times, we rarely have a chance to live outside this house' (Franklin 1990, p. 11).

Franklin's words from 1990 seem remarkably vatic if we consider that this was in the early days of the Internet as a mainstream phenomenon. The contemporary ubiquity of technology could, perhaps, have been unimaginable to Franklin and her contemporaries. Today, the Internet is far different from the vision of Tim Berners Lee who, in launching the first page on the World Wide Web in 1990, proudly stated 'This is for Everyone'. Now, it may be more accurate to state that 'This is *by* Everyone', which is particularly true of the free labour required by platforms such as ChatGPT. To constantly improve their responses, these bots *need* humans to use them; information fed by humans is utilized in refining responses to *appear* more human.

### AI and its implications for pedagogy

Haenlein & Kaplan (2019) offer a balance of views in relation to the past, present, and future of AI and conclude that it will become the norm. AI has dominated the press whilst energising higher education conversations since its release as an Open AI online software resource via recent models of *ChatGPT* and Google's *Bard*. The interest lies within two areas; firstly, AI's ability to seemingly generate human-like text, graphics, software, and music, creating a piece of work based on the user's needs and demands. Secondly, concerns about the legality of use in professional environments regarding copyright material and plagiarism (Adelani et al., 2020). *Large Language Models* (LLMs) in Natural Language Processing (NLP) continue to develop accuracy, range, and size of abilities at an alarming rate. Consequently, AI will become highly efficient and accurate in its delivery and creativity as increased numbers of users log onto the systems. The ability to be precise increases as the AI requests feedback of accuracy from the client and the systems are in effect, learning how to 'determine'.

Higher education establishments have traditionally utilised the essay as a tool of assessment, demonstrating a student's ability to understand, research, analyse and reflect. An essay is an easy process for AI to replicate and the standard of that replication is determined by the detail submitted by the user. As the LLMs improve, the level of competence progresses and determining what is human created or AI generated will soon be impossible, rendering the traditional essay an invalid tool for assessment. AI can also do many other assessment-based tasks including lyric and song writing, advertising slogans, computer programming and even cover letters for job applications, all of which find their way into assessment categories which in turn, poses a big problem for our academic institutions. The problem is to ensure 'that AI doesn't become so proficient at doing the job it was designed to do that it crosses over ethical or legal boundaries' (Marr, 2023).

Dobrin (2023) believes that 'generative A.I is not destroying education; it is reinvigorating education in a new context. It is rewriting it'. Is it time that traditional pedagogy was replaced with new and innovative types of teaching and assessment that engages the student substantially more than a traditional process. A forced AI protective methodology will benefit the student in more ways than writing an essay. AI busting techniques include specific research resources with assessments based around localised topics saving traditional techniques such as free-range referencing for advanced and trusted postgraduate levels. Of course, the art of referencing and paraphrasing remains an academic priority, but assessment should not encourage AI. In some instances, maybe it is time for a return to classroom examinations, which might mean a return to the biases which accompany traditional modes of assessment. For students with an ability to demonstrate the hallmarks of logical-mathematical intelligence by which IQ is traditionally measured, a pushback against AI might be beneficial (Gardner 2006). Continual draft assessment encourages students' progression and familiarises the marker with individuals' skills and deficiencies whilst following their process of development. Critical reflection upon personal experiences within discussions, tutorials and seminars increase a student's awareness of subject interrogation and analysis of audio and visual media takes away a reliance of written texts. However, innovative assessment strategies will not deter or eradicate AI plagiarism alone. A combination of method and strategy needs to be developed which will 'require many of us to revise – if not altogether surrender a lot of assumptions and philosophies upon which we have developed our teaching careers' (Dobrin, 2023).

Despite education being largely absent from policy conversations (Schiff 2022), many universities have already fashioned an AI usage policy which creates an interesting new dilemma; in dealing with AI, universities should be proactive and mindful of the ethical concerns when developing policy (Cotton et al., 2023). AI could be invested in as an educational resource, completely banned, or partially permitted with accountable use. In an age of ubiquitous surveillance, where students' activities are closely monitored, such as in VLE engagement and attendance, additionally monitoring AI use might be viewed as a further intrusion. Institutions should state a general AI policy, leaving localised decisions to the expert lecturers to define usage within assessment criteria. Academic integrity and plagiarism have always been seen as an important part of higher education, often with a serious face on its delivery of standing. The importance of honesty and integrity should be integrated into classroom life, its prominence in the real world emphasised with associated ethical challenges delivered as part of the continuous curriculum. Like universities, publishers should be (and increasingly are) concerned of the threat posed by AI to their business models. Whilst discussing the problem in relation to accurate use of referencing systems, *Cite Them Right* (Bloomsbury Publishing, 2023), has recently updated guidance on when to AI and, if used, how to cite correctly. Of course, academics might also be concerned about AI replacing them, much in the same way that other industries have chosen AI over human skills.

The use of A.I technologies is not going to disappear, and only blinkered establishments will fail to encourage its students to investigate, utilise and lead in the development of this new technology. Teaching students how this technology works is just as important as utilising it. Understanding where AI gets its information from and how it is utilised is an asset to research and scholarly activity. Realising the shortfalls of current accuracy and encouraging individuals to dig deep to find original

sources is an invaluable technique. However, allowing students to pass off work created by AI as their own, is just as bad as the most serious offences in plagiarism, so a balance must be established.

**The future of AI and its implications for creative pedagogies**

Cotton et al (2023) suggest that:

Another potential opportunity for GPT-3 [ChatGPT] in higher education is in the creation of interactive, game-based assessments. GPT-3 could be used to create chatbots or virtual assistants that challenge students to solve problems or answer questions through natural language interaction’ (p. 2).

In their article, Cotton et al demonstrate the sophistication of AI, with generative AI writing the first six pages; a practice that is being used (playfully) by others (Rospigliosi, 2023) as a way of demonstrating AI’s potential. For creative subjects such as Drama, Theatre and Performance, this offers interesting and exciting opportunities for enhancing creative working methods. Whilst generative AI might be a portal through which creativity is unleashed, it is important – as Rospigliosi asserts ‘that we consider the ethical implications and potential risks associated with its use such as the perpetuation of historical injustices (2023, p. 2). In this sense, AI cannot demonstrate humanity or empathy towards others in the same way as sentient human beings.

Using a SWOT analysis to assess ChatGPT use in education, Farrokhnia et al (2023) list the following:

|                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• generating plausible responses</li> <li>• having self-improving capability</li> <li>• providing personalised responses</li> <li>• providing real time responses</li> </ul>                   | <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• increasing accessibility of information</li> <li>• facilitated personalised learning</li> <li>• facilitating complex learning</li> <li>• decreasing teaching workload</li> </ul>                                                                      |
| <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• lack of deep understanding</li> <li>• difficulty in evaluating quality of responses</li> <li>• risk of biases and discrimination</li> <li>• lack of higher order thinking skills</li> </ul> | <p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• lack of understanding context</li> <li>• threatening academic integrity</li> <li>• perpetuating discrimination in education</li> <li>• democratisation of plagiarism in education / research</li> <li>• decline in higher order cognitive skills</li> </ul> |

Table 1: Adapted from Farrokhnia et al (2023, pp. 3-9).

Whilst acknowledgement of the weaknesses and threats identified by the authors is important, we have – in this chapter - set out to demonstrate the positive potential of ChatGPT in creative education and will therefore give some attention to exploring the strengths and opportunities of ChatGPT and how these might be relevant to drama, theatre, and performance. Farrokhnia et al, in using examples of gathering feedback on an essay, show that ChatGPT might be used as a critical friend to a student. They share three examples of asking ChatGPT for feedback based on being constructive, nice, and critical, showing an ability to be specific, paradoxically, in a generalised way. Its role here as a ‘conversational agent’ (2023, p. 6) might prove beneficial in generating and responding to creative processes.

In what seems to be an emerging trend in writing about generative AI, we asked ChatGPT some questions based on these strengths and opportunities. In this first test, we were interested to see

how well AI understands style and genre and its ability to generate plausible responses. When asked to 'Write a synopsis for a Naturalist drama', ChatGPT provided the following response, which was generated immediately.

*Nature's Unseen Symphony* is a poignant naturalist drama that delves into the interconnected lives of a diverse group of characters, all deeply connected to the natural world. Set in a tranquil countryside, the story unravels the beauty and complexities of human relationships while exploring the intricate relationship between humanity and the environment.

The narrative centres around Claire, an introspective and passionate botanist, who has dedicated her life to understanding and protecting the fragile ecosystem surrounding her small community. Through her eyes, we witness the transformative power of nature as she navigates personal challenges, environmental crises, and the hidden wonders of the natural world.

Claire's journey intertwines with other compelling characters: Max, an enigmatic wildlife photographer who captures both the ethereal beauty and harsh realities of the wilderness; Sarah, an empathetic park ranger who strives to balance conservation efforts with the needs of the local community; and Thomas, a young artist grappling with his role in capturing the essence of nature through his paintings.

Amidst the backdrop of environmental threats, personal conflicts, and societal pressures, the characters' lives become deeply intertwined. They form unexpected alliances, confront their inner demons, and experience profound moments of connection with the natural world.

*Nature's Unseen Symphony* is a thought-provoking and visually stunning drama that underscores the urgency of protecting our environment while exploring the intricate and fragile relationships between humans and the natural world. (OpenAI, 2023a)

Although ChatGPT correctly identifies that Naturalism in the theatre is concerned with people and their interactions with their environment, the content has a sharp focus on nature, with references to a 'fragile ecosystem' and a 'rich tapestry of flora and fauna'. ChatGPT's understanding of Naturalism is largely erroneous and so, as a tool for creativity, may only be partially relevant. This response demonstrates a lack of understanding of context which Farrokhnia et al identify as a potential threat to education and may also mark a decline in higher order cognitive skills. From a creative perspective, the AI generated synopsis for *Nature's Unseen Symphony* might provide a useful starting point for a writer or member of a devising ensemble.

As a second test, we asked ChatGPT to 'write a scene in the style of August Strindberg', a playwright considered to be a major figure in Naturalist theatre. ChatGPT responded with:

Scene: A Desolate Room

Characters:

- Erik: A middle-aged man, dishevelled and weary.
- Marta: A young woman, anxious and distraught.

(The scene is set in a dimly lit, sparsely furnished room. The walls are worn and peeling, revealing the decayed state of the place. A single window, covered with tattered curtains,

lets in feeble rays of sunlight. Erik sits on a rickety chair, lost in thought, while Marta paces back and forth, her movements restless.)

Marta: (Anxiously) Erik, we cannot go on like this. We are drowning in this suffocating silence. I cannot bear it any longer.

Erik: (Weary) Marta, can't you see? Silence is the only language left to us. Words have become futile, empty shells. We have exhausted them, like everything else in our lives.

Marta: (Desperate) But we must break this silence! We must find a way to bridge the vast void that has engulfed us. Our souls are starving, Erik.

Erik: (Sighs) What use is it, Marta? Our souls were once intertwined, like the roots of two trees. But now, they wither and decay, unable to find nourishment in this barren land we have created.

Marta: (Frustrated) You speak in riddles, Erik. I long for clarity, for a spark of hope amidst this desolation. Can we not reach for each other, even if it means stepping on the thorns of our own insecurities?

Erik: (Bitterly) Insecurities? No, Marta, it is not mere insecurity that holds us back. It is the fear of facing the truth, of seeing ourselves stripped of the illusions we have clung to for far too long.

Marta: (Passionately) Then let us confront the truth, Erik! Let us strip away the layers of pretence and confront the raw reality that lies beneath. Only through such rawness can we discover the essence of our connection.

Erik: (With a trace of sadness) Marta, you speak with the fervour of a dreamer, but dreams, like mirages, evaporate in the harsh light of reality. We are trapped, entangled in the web of our own regrets and disappointments.

Marta: (Defiantly) I refuse to accept that, Erik! I refuse to surrender to this desolate existence we have fashioned for ourselves. There must be a way to break free, to breathe life into our stifled hearts.

Erik: (Resigned) Perhaps you are right, Marta. Perhaps there is a sliver of hope buried within the rubble of our broken dreams. But I fear that even if we find it, it may not be enough to resurrect what has long been dead.

(They fall silent, the weight of their unspoken words hanging heavily in the air. The room, once filled with the echoes of their impassioned voices, returns to its desolate stillness. Outside, the world continues its relentless march, oblivious to the plight of these two lost souls.) (OpenAI, 2023b).

Broadly, the text generated has some correlation to Strindberg's style of writing although it lacks the psychological complexity and nuance of his characters. ChatGPT has used its knowledge of Strindberg's nationality (Swedish) and therefore employed Scandinavian sounding character names. Notably, the overuse of stage direction before each line makes it less convincing as, although Naturalist playwrights such as Strindberg were concerned with showing a 'slice of life' on stage, such detail was usually reserved for establishing scenic arrangements and an emphasis on removing the fourth wall (Rebellato, 2016).

## A conclusion and some provocations

Based on these early experiments, it is clear to see that AI presents some interesting opportunities for creative subjects. For the theatre maker, AI can act as another member of the devising ensemble; the rehearsal room of the 21<sup>st</sup> century no longer relies on just human bodies and minds coming together to generate ideas, as a contributor in the creative process. ChatGPT only exposes the limitations of a machine's ability to think independently that Turing (1950) famously discussed but, like the boy in Spielberg's film, perhaps AI can help us be *more* human.

What is the relationship between humans and machines? We use data to structure and inform our lives (smartwatches, smartphones, smart speakers, smart homes/Internet of things, GPS), so we are already symbiotic with technology and machines. In his seminal paper in 1950, Alan Turing posed the question 'can machines think'? In doing so, Turing conjectured about the possibilities of a machine deceiving a human into thinking it is also human. At this stage of AI development, it cannot yet assume human qualities to the extent that it would pass the Turing test, as our brief experiments with ChatGPT illustrate.

The biggest debates on AI are yet to emerge and so we conclude by offering some provocations in a spirit of contributing to these discussions:

1. Do not rage against the machine! AI and humans can achieve more together. When the nineteenth century Luddites smashed the machines they feared would take their jobs, they merely delayed the inevitable necessary integration of humans and technology.
2. Use AI as a critical friend for your creativity but remember to also be critical of AI. It is important to know when AI might be wrong so trust your own knowledge and instincts.
3. AI is nothing without human knowledge. Use it as a mirror for understanding the world and look AI in the eye as you would any creative collaborator. AI stands on the shoulders of giants: you are that giant.

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