



AI-ENABLED SOCRATIC DIALOGUE: TESTING AND DEVELOPING STUDENT TEXTUAL KNOWLEDGE

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Across Australia, and indeed the world, norms of teaching and learning are being challenged by the emergence of AI. The rapidly changing and evolving technology makes it hard for educators to keep up with developments; much less ensure their teaching is responsive to them. This has been particularly prevalent in the English classroom, where generative AI such as ChatGPT can quickly create a passable essay or narrative, often without being detected.

The students in our English classroom will enter a world dominated by AI. Organisations such as Gartner and McKinsey predict that generative AI and other developments in the AI space are accelerating societal change at much faster rate than previous technological breakthroughs such as the development of steam power or the piston engine or even the internet. Indeed, some have worried that the emergence of AI will increase the rate of the deskilling of mankind, turning humans into passive consumers of machine knowledge. In response to this rapid change, many schools and governing bodies have made moves to ban AI platforms, preventing students from engaging with a technological shift so profound it may come to shape the next century human existence. So, rather than ban these technologies, we need to think about ways we can engage meaningfully with them, teach responsible use and turn them into tools for learning rather than vehicles for passive information consumption, or worse, banning them altogether.

In the English classroom, there are few more powerful practices than interrogating the thinking of students through targeted

questioning. Socrates believed that continuous, disciplined, responsive and thoughtful questioning enabled students to examine their own knowledge and validate their own ideas. In this sort of Socratic dialogue, the questioner feigns ignorance, asking a series of questions that prompt a student to think deeply on a topic, drawing out their knowledge and allowing the questioner to provide feedback on gaps and false assumptions. But what English teacher has the time to conduct this exercise with each individual student? This is where AI, specifically ChatGPT, presents an opportunity as a tool for learning.

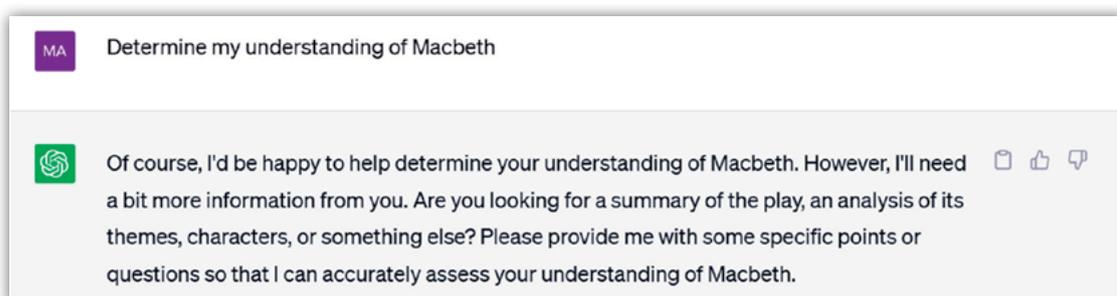
In my Year 12 English class, we are currently studying Macbeth as part of Unit 4 of the QCAA English Syllabus. Students have read the text and are practising their analytical writing skills in order to answer unseen questions. The task requires students to have a sophisticated understanding of Macbeth. Many students have sought the use of ChatGPT to assist them in their preparations. Consider a typical prompt entered in to ChatGPT below:

Student: 'What are the most important quotes in Macbeth?'

The answer is unsurprising. ChatGPT consults its extensive sources and spits out a series of quotes that mostly align to the original request. The response could be replicated by any number of websites or textbooks. This is the passive consumption of knowledge. A student may write these down somewhere and consult them later in order to learn them but there is little in the way of deep learning occurring.

Now consider this prompt:

Student: 'Determine my understanding of Macbeth.'

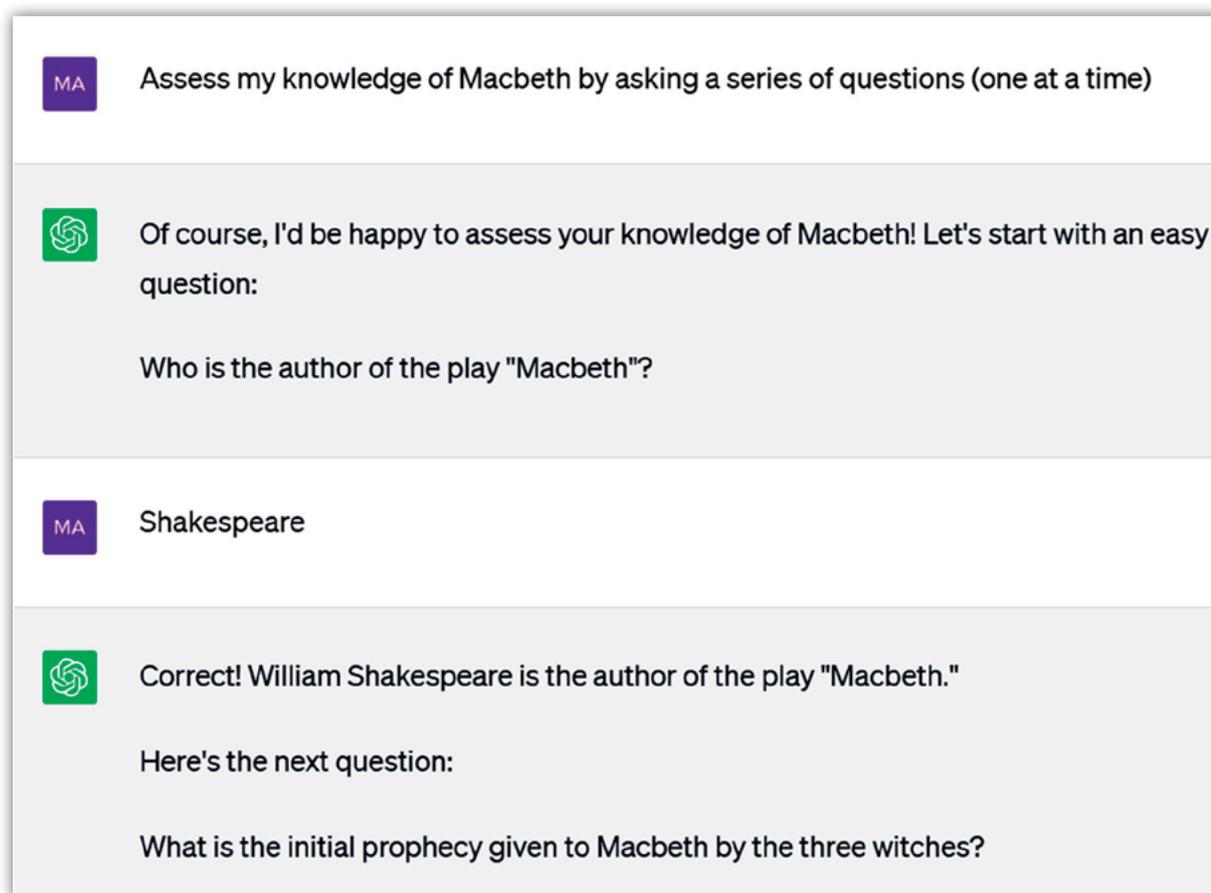


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This prompt provides a more interesting response than the previous. However, the information that ChatGPT is seeking to provide could still be found on any number of websites or textbooks. There is little more going on here than the presentation of knowledge.

But ChatGPT can get far more specific than this. It can track a conversation and provide instant feedback. By adjusting the prompt given, students can really begin to leverage the potential for questioning and instant feedback presented by ChatGPT. Consider a re-developed prompt:

Student: 'Assess my knowledge of Macbeth by asking a series of questions (one at a time).'



The screenshot shows a chat interface with four messages. The first message is from the student (MA) asking to be assessed on Macbeth. The second message is from ChatGPT (GPT) agreeing and asking for the author. The third message is from the student (MA) answering 'Shakespeare'. The fourth message is from ChatGPT (GPT) confirming the answer and asking for the initial prophecy.

MA Assess my knowledge of Macbeth by asking a series of questions (one at a time)

GPT Of course, I'd be happy to assess your knowledge of Macbeth! Let's start with an easy question:

Who is the author of the play "Macbeth"?

MA Shakespeare

GPT Correct! William Shakespeare is the author of the play "Macbeth."

Here's the next question:

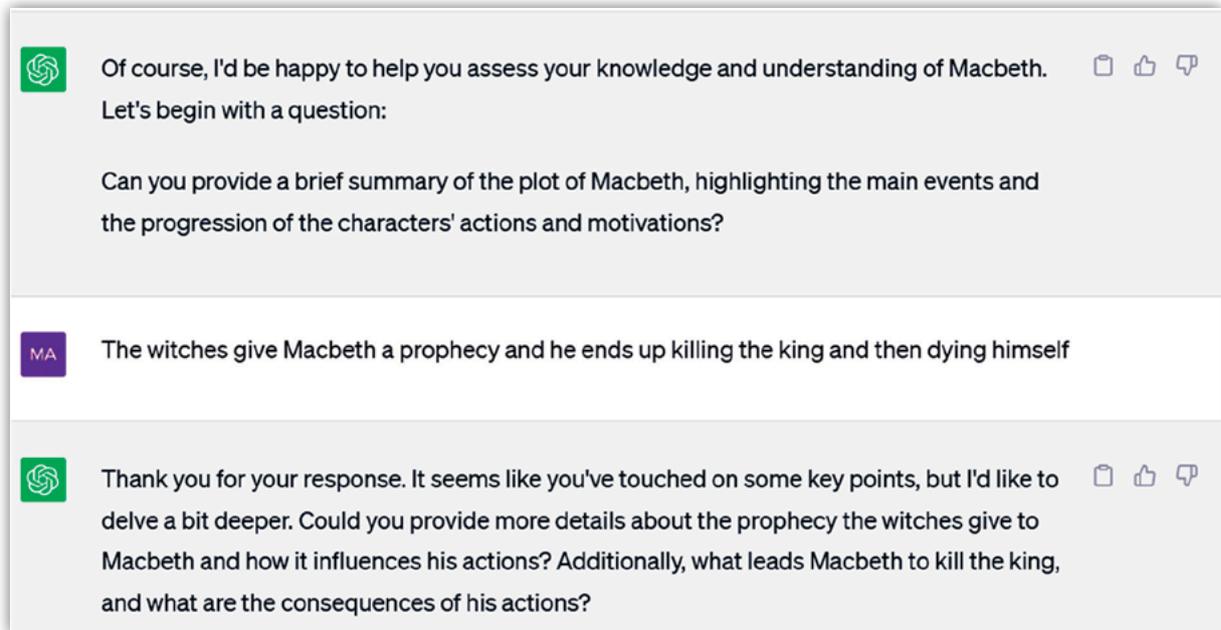
What is the initial prophecy given to Macbeth by the three witches?

Now things start to get more interesting. The student interacts with ChatGPT in a conversation, moving beyond the simple presentation and consumption of knowledge to a more targeted dialogue. Moreover, as the conversation progresses, the questions are tailored to the student's knowledge of the text.

But ChatGPT is capable of handling far more sophisticated prompts than a simple request such as this. It can process large amounts of texts and synthesis responses accordingly. So, what would happen if students were given a prompt that was already prepared for them? This is what I sought to do. The prompt I ended up developing was close to 1000 words in length. The basic premise of the prompt was that it contained the Syllabus Subject Matter for Unit 4: Area of Study 2, The Assessment Objectives for the External Exam and an overview of the Analytical Exam Assessment Instrument. All of this information was followed with the following prompt: 'You are an expert on the process of Socratic dialogue. Please assess my knowledge and understanding of Macbeth by asking a series of questions (one at a time) to help me prepare for my exam. Ask me follow up questions when I demonstrate a shallow understanding or vagueness in my response. Once you are confident that you have assessed my level of understanding, give me some productive and targeted feedback.'

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The results are pretty amazing:



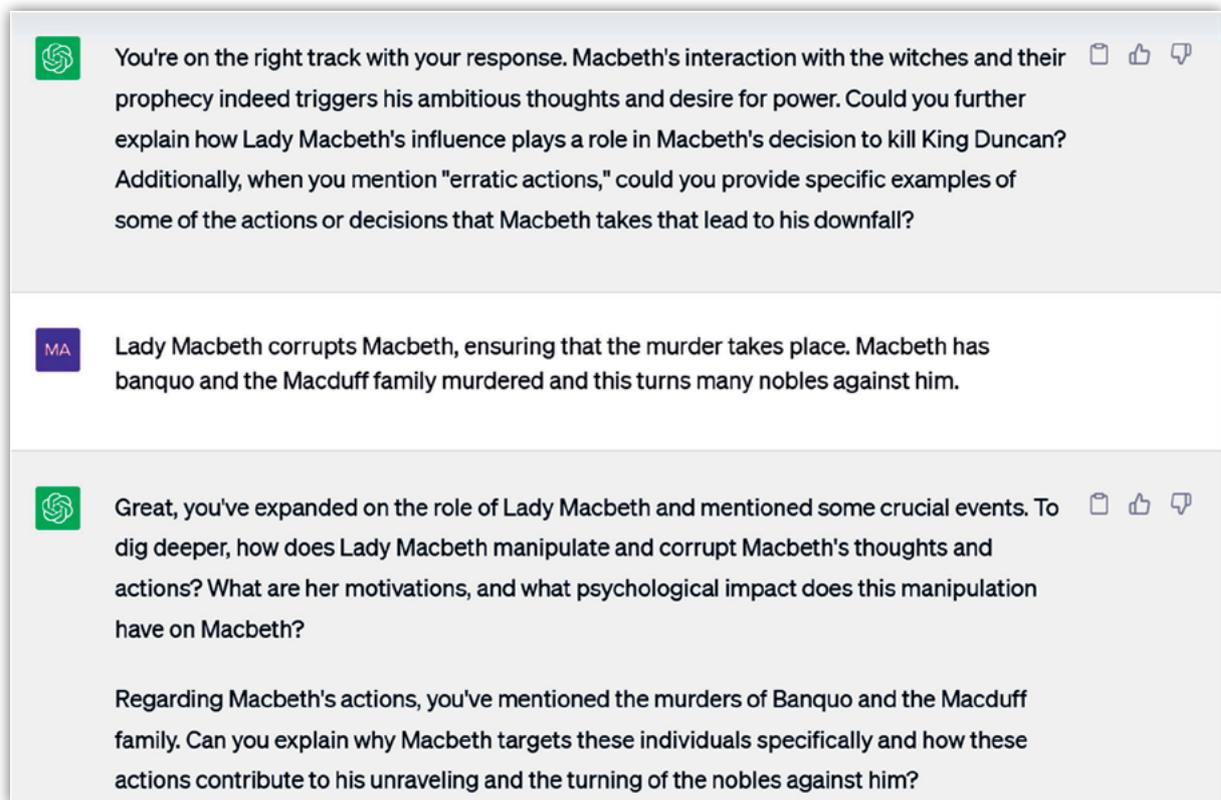
The screenshot shows a chat interface with three messages. The first message is from an AI assistant (GPT icon) and the second is from a student (MA icon). The third message is another AI assistant response.

AI Assistant: Of course, I'd be happy to help you assess your knowledge and understanding of Macbeth. Let's begin with a question:
Can you provide a brief summary of the plot of Macbeth, highlighting the main events and the progression of the characters' actions and motivations?

Student (MA): The witches give Macbeth a prophecy and he ends up killing the king and then dying himself

AI Assistant: Thank you for your response. It seems like you've touched on some key points, but I'd like to delve a bit deeper. Could you provide more details about the prophecy the witches give to Macbeth and how it influences his actions? Additionally, what leads Macbeth to kill the king, and what are the consequences of his actions?

The conversation continues to progress.



The screenshot shows the continuation of the chat with three more messages. The first is an AI assistant response, the second is a student response, and the third is another AI assistant response.

AI Assistant: You're on the right track with your response. Macbeth's interaction with the witches and their prophecy indeed triggers his ambitious thoughts and desire for power. Could you further explain how Lady Macbeth's influence plays a role in Macbeth's decision to kill King Duncan? Additionally, when you mention "erratic actions," could you provide specific examples of some of the actions or decisions that Macbeth takes that lead to his downfall?

Student (MA): Lady Macbeth corrupts Macbeth, ensuring that the murder takes place. Macbeth has Banquo and the Macduff family murdered and this turns many nobles against him.

AI Assistant: Great, you've expanded on the role of Lady Macbeth and mentioned some crucial events. To dig deeper, how does Lady Macbeth manipulate and corrupt Macbeth's thoughts and actions? What are her motivations, and what psychological impact does this manipulation have on Macbeth?

Regarding Macbeth's actions, you've mentioned the murders of Banquo and the Macduff family. Can you explain why Macbeth targets these individuals specifically and how these actions contribute to his unraveling and the turning of the nobles against him?

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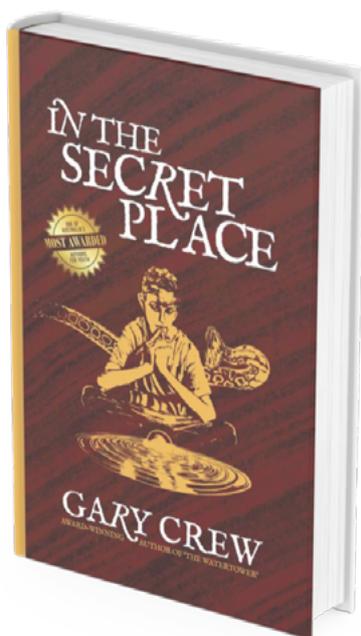
These sorts of learning experiences are so powerful for students. ChatGPT acts as a personal tutor in this dialogue, tailoring questions and difficulty levels to the student's understanding and providing instant and continuous feedback. Furthermore, the student is prompted to interrogate their own understanding of the text and consider the areas in which they need to develop their understanding further. This, coupled with the fact that the dialogue is adjusted to suit the syllabus objectives, means that the learning of students is targeted and purposeful.

No tool is perfect. There are of course limitations to AI in the classroom and teachers need to be careful not to rely too heavily on tools like ChatGPT as a substitute for good teaching practices. Moreover, there are ethical considerations to take into account when utilising AI in the classroom, such as data privacy and age limitations in terms of agreement. Coupled with this, English teachers need to be careful to teach the ethical use of this technology in order to ensure the integrity of the work that students produce. But this should not prevent teachers from rejecting this technology altogether.

Many organisations claim that we are on the brink of an AI revolution, proposing that this new era that will come to define the 21st Century. Indeed, it is certain that AI will redefine education in a lot of ways – perhaps even act as an equalizing force, democratising our educational systems. Access to AI technology is open and mostly equitable; an internet connection is all that is required. But teaching and learning are not passive processes, they are inherently human. When students can interact with AI in meaningful ways we teach them that this technology is a tool for learning, and we prepare them for an uncertain world beyond the boundaries of our schools.

About the author

Max is the Head of English at Brisbane Boys' College. He is interested in how teachers and educators might engage with AI to shape meaningful learning experiences for students



What does a teenage boy do when he has no friends?
When everyone who knows him sneers.
When he is laughed at to his face?

The answer is simple. That boy chooses his own path.
That boy makes his own way in life. That boy grows
stronger. He finds his secret place and there —
alone, in the dark — he grows even stronger.

Ben Gardner is such a boy.

Ben Gardner could be you...

In the words of Shaun Tan, In the Secret Place is “quintessential Crew – wild things, family, friendship and deep time. A captivating story of self-discovery.”

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