## **[Further Exploring Course Designing In The Age of Generative AI With Derek Bruff, PhD. Episode 183](https://themagicmountiepodcast.libsyn.com/further-exploring-course-designing-in-the-age-of-generative-ai-with-derek-bruff-phd-episode-183)**

00:00:00 **Derek**

You've got to figure out what's going to work for your students, your teaching approaches. But I think there's a process here that's helpful. So, I would start by asking yourself, what's the assignment? What are the specific learning objectives? And then you've got to explore how might the students use the AI while working on the assignment.

00:00:16 **Derek**

But once I have a sense of what I want students to get out of it, and I have a sense of how the AI tools might be used, now I can start to say, okay, how might the AI undercut the goals of this assignment? And how can I mitigate this? And how might the AI enhance the assignment? And where would students need help figuring that out?

00:00:37 **Christina**

Hi, I'm Christina Barsi.

00:00:39 **Sun**

And I'm Sun Ezzell. And you're listening to the Magic Mountie Podcast.

00:00:43 **Christina**

Our mission is to find ways to keep your ear to the ground, so to speak, by bringing to you the activities and events you may not have time to attend, the resources on campus you might want to know more about, the interesting things your colleagues are creating, and the many ways we can continue to better help and guide our students.

00:01:00 **Sun**

We bring to you the voices Mt. SAC, from the classroom to completion.

00:01:03 **Speaker 1**

And I know I'm going to achieve my goals, and I know people here are going to help me to do it.

00:01:08 **Speaker 2**

She is a sociology major and she's transferring to Cal Poly Pomona, Psychology major, English major.

00:01:15 **Sun**

From transforming part-time into full-time.

00:01:17 **Speaker 1**

I really like the time that we spend with Julie about how to write a CV and a cover letter.

00:01:24 **Christina**

Or just finding time to soak in the campus.

00:01:26 **Speaker 1**

Think of the natural environment around us as a library.

00:01:30 **Christina**

We want to keep you informed and connected to all things Mt. SAC, but most importantly, we want to keep you connected with each other. I'm Christina Barsi, Mt. SAC alumni and producer of this podcast.

00:01:41 **Sun**

And I'm Sun Ezzell, learning assistance faculty and professional learning academy coordinator.

00:01:46 **Christina**

And this is the Magic Mountie Podcast.

00:01:53 **Christina**

If you enjoyed our previous episode, featuring Dr. Derek Bruff's keynote on teaching and learning in the age of generative AI captured at Fall Flex Day 2023, then today's episode, we have more on this topic for you. Listen in as Dr. Bruff does an even deeper dive in his follow-up discussion, also taken from the 2023 Fall Flex Day. Enjoy.

00:02:20 **Derek**

So, I decided to take this assignment this summer and ask myself, what would students do with AI tools now with this older assignment? And I really imagined a couple of different kinds of students. I imagined a student who wants to do really well and is trying to take advantage of every tool or application they have. And then a student who would like to get out of as much work as possible. How might they approach this?

00:02:43 **Derek**

And so, my first approach was to essentially take the assignment description and put it right in a ChatGPT, and say, do this, write this paper. And the irony here is that as an instructor, I have worked to make my assignment descriptions very explicit and very transparent to my students. I think they need that. I think they benefit from that. But it also makes it really easy to cut and paste it into ChatGPT and say, write this, please.

00:03:10 **Derek**

Now, what ChatGPT produced had one kind of major flaw? Well, two big flaws really. One was it picked a cipher, it picked a topic that we'd actually talked a lot about in class. So, this was not a good topic for this paper assignment. We have no way of knowing that.

00:03:26 **Derek**

But perhaps more importantly, it wrote a really boring essay. It was very by the numbers, very rote . Give me the origin, the use, the influence. It gives me a paragraph on origin and paragraph on use, paragraph on influence. Very boring, not very exciting.

00:03:40 **Derek**

I actually got my rubric out and I graded this essay, and it was a D minus . So, I thought, okay, that was a horror start, but let's keep pushing at this. So, I went back to ChatGPT, and I said, what are some other codes and ciphers from history? Because the student would know that in fact, that first topic was inappropriate. They need to find a different topic.

00:03:59 **Derek**

And I can ask ChatGPT try to generate more paper topics. And in fact, it did a good job generating paper topics. I got 20 different topics out of it, all of which were relevant to the course, many of which we cover in the course. So, they weren't relevant for this assignment, but they were all good choices on some level.

00:04:16 **Derek**

And so, I picked a different World War II cipher machine, not the Enigma machine, which is the more famous of the ones, but the Japanese purple cipher. And so, then I went to that tool that I mentioned in the keynote Elicit , and I said, what is known about the origin use influence and mechanics of the Japanese purple cipher?

00:04:35 **Derek**

And so, again, this is a tool that's going to search scholarly literature and try to answer your question. And so, it did a pretty decent job. It gave me a summary of what it found. It gave me the citation information for all the papers. It gave me the abstract summary.

00:04:50 **Derek**

And as someone who works in the space, I could look at this and even from this amount of information, start to make some judgment calls about which of these papers are going to be more or less useful for what I'm after.

00:05:02 **Derek**

Some of them were actually a little too generic. They were about military cryptography and not Japanese purple cipher, but some of them look pretty good. I either know the journal or the title sounded quite relevant.

00:05:13 **Derek**

So, my students wouldn't have that kind of background. They'd have to do some digging and follow these links and do some more research on these papers. But it was a pretty decent set of starting points for this topic. So, I was impressed with Elicit .

00:05:26 **Derek**

I was less impressed with Bing Chat. I asked it the same question and it gave me a summary of responses. The summary is pretty good, actually. And a couple of the sources are fine. It pulled from Wikipedia and everything I saw there was accurate.

00:05:40 **Derek**

But some of the sources were a little dodgy. They're what I call a guy with a blog source. So, someone somewhere wrote a blog post about the Japanese purple cipher, and I don't know who they are and why they wrote this post. And it's not always clear from their blog, do they have a university affiliation? Do they work for a cybersecurity company? I don't know.

00:06:01 **Derek**

So, the source generation here was much worse actually, than Elicit. But I imagined at least my enterprising student now has a paper topic that's a good topic. They now maybe have a set of sources. And so, then I thought, let me go back to ChatGPT and give it another shot.

00:06:17 **Derek**

So, one of its failings was that it was really boring. So, I said, let's try a whole different prompt . Tell me an exciting story about the breaking of the Japanese purple cipher. This is not fine literature, but there's a narrative arc to what it gave me.

00:06:32 **Derek**

It gave me a little bit of mystery, a little sense of anticipation. It's a much better essay than the first version. The first version did a little bit better at meeting the specific goals of the assignment. The use, the origins, all that kind of stuff. The kind of technical information was better. This had more of the storytelling.

00:06:51 **Derek**

And so, I was imagining now a student, at least a student who's wanting to kind of do this pretty well. I've got two different versions of the paper. Neither of them quite hit the mark, but they both have something of value. And then I've got some decent sources.

00:07:03 **Derek**

So, I could use that now as the ingredients to write a decent paper. I may pick up some storytelling strategies from this essay. I may ask ChatGPT to kind of explain how the cipher works a little bit more. It's pretty good at technical writing.

00:07:17 **Derek**

You can tell ChatGPT to simplify its explanations, explain it to me like I'm a third grader and it knows how to interpret that. So, if I wanted ChatGPT to help kind of target the right technical audience for this paper, it can help with that.

00:07:31 **Derek**

So, that was kind of my analysis. And so, then I came down to some decisions that I would make about this assignment. One is that I'm going to decide to teach writing with AI. I'm teaching this first year writing seminar, and this was probably the hardest of the decisions.

00:07:48 **Derek**

Do I want to teach writing without AI tools? Do I want to red light this or do I want to teach writing with the AI tools? And this one's especially hard because for this course it's a first year writing seminar. It's designed to prepare students for other writing assignments they'll have in college. And I know my faculty colleagues are going to adopt different policies on AI.

00:08:07 **Derek**

So, if this were an upper level course preparing students for a particular discipline or professional area, I would just kind of tune into whatever their professional standards are. How are they using AI in that profession? That's how I would decide how much I need to use it or not. But in this case, I decided, let's lean into it. Let's figure out how to use the tool as well.

00:08:27 **Derek**

Other things I would do. As a class activity, I would take a couple of those ChatGPT drafts, I'd pull them up on the big screen, I'd pass out the rubric and have students evaluate it. I already do this with kind of student peer review anyway. I'll have a kind of guinea pig volunteer, a draft of their paper, and we'll all evaluate it together.

00:08:42 **Derek**

But this would be a great opportunity for the students to get a better sense of what's not good about the ChatGPT draft and maybe what's good about it. So, we'll do that as a class activity.

00:08:53 **Derek**

I would spend class time on structured peer review. I want students reading each other's work and giving them feedback on it. Because even if that work was written with some AI tools, the conversation they have about it is something that will help them think about storytelling and technical communication and the quality of sources.

00:09:09 **Derek**

Speaking of sources, I think this is a great teaching moment to talk about how we find credible sources for our work. And so, the fact that the tools gave me a variety of sources in terms of quality, I think we can use that as a teaching moment to help students learn this.

00:09:23 **Derek**

And then I'm going to ask students to document and reflect on their use of AI. Write up a short little piece where they tell me how they're using AI, what they found it useful for, what they found problematic about it. I think I'll learn a lot from them about this. And also, I want to have this transparent environment where students can feel free to talk to me about this, where they don't feel like they have to hide their use of it.

00:09:43 **Derek**

And then finally, maybe revise the rubric. I need to go back to the rubric and there may be some categories on that rubric that are less important now. So, I've got that one about grammar and syntax, and maybe I don't need to worry about that. I'll just assume that students are going to get the help they need from the AI to do that. And I won't put as many points on that. So, that's something that I would also have to do.

00:10:01 **Derek**

Now, you don't have to make any of those decisions, you've got to figure out what's going to work for your students, your course context, your teaching approaches. But I think there's a process here that's helpful. So, I would start by asking yourself, what's the assignment? Why does it make sense for this course? What are the specific learning objectives for the assignment?

00:10:20 **Derek**

I talked about technical writing, I talked about storytelling, I talked about finding resources. What are those learning objectives? Be as specific as you can be.

00:10:30 **Derek**

And then you've got to explore how might the students use the AI while working on the assignment? And this might take some experimentation, like I had to ask different prompts, use different tools.

00:10:39 **Derek**

But once I have a sense of what I want students to get out of it, and I have a sense of how the AI tools might be used, now I can start to say, okay, how might the AI undercut the goals of this assignment? And how can I mitigate this? And how might the AI enhance the assignment? And where would students need help figuring that out?

00:10:58 **Derek**

And so, in my case, the fact that the AI can tell a good story is actually a little problematic for me. So, I've got to kind of work around that. How can I bring that storytelling piece to the process a little more explicitly, so I can make sure students are actually engaging in that?

00:11:13 **Derek**

Whereas with the sources, AI is actually helpful there because it gave me such a strange collection of sources, it gives me an opportunity to help students work through that.

00:11:22 **Derek**

And then finally, this is advice from that Anna Mills piece that I mentioned earlier. Focus on the process. How can I make this assignment more meaningful for students? Or how can I support them more in the work? And so, that's what you need to think about in your courses. How can you scaffold this a little bit more? How can you give students chance to practice and get feedback before the final assignment? Those are things that are going to help them have a little more confidence going into the work.

00:11:45 **Derek**

So, one more brief example, and then I'm going to have you guys play around with this process a little bit. Very different kind of course. I teach a statistics course sometimes. And so, a few years ago I had students create infographics as a final assignment. So, it was stats plus data visualization with, again, some kind of narrative storytelling through visuals.

00:12:03 **Derek**

I have a pretty detailed list of learning objectives for this assignment and this course. Students have to determine an appropriate research question, work with messy data, apply the stats correctly, and then visualize and communicate those results.

00:12:16 **Derek**

And then within each of those, I've got kind of sub-bullets, other skills that students are going to need in order to get there. And so, it was very helpful for me years ago to kind of map out my course this way because I now tie so many homework and in-class activities around particular skills here.

00:12:33 **Derek**

So, I know students are getting that practice with those skills as they go. So, when we get to the final project, they're not coming in cold and they can start to put these together on one assignment.

00:12:43 **Derek**

So, then I went and played around with the tools to kind of see what they could do. So, as I mentioned earlier, ChatGPT can visualize data. So, that's something that's useful to know for this type of assignment.

00:12:54 **Derek**

It can also try to analyze data visualizations for you. At least Google Bard can. Right now, Google Bard is the main tool, if you want to give a tool an image and ask it to tell you what's in that image. ChatGPT won't let you upload an image like that. But Google Bard will. It's kind of good and kind of bad. Google Bard is also like, I think least reliable of the major tools in terms of what it comes up with.

00:13:16 **Derek**

But in this case, I found this image, actually a biology faculty member shared it at a conference this summer. It's about frogs I think. And when they shut down because it's too cold and it has some data there. I gave this image to Google Bard, it actually told me a lot about this image. I think because the image is found somewhere online, it was able to look up a little bit more about the image, but it could read some data visualizations and make some sense out of it.

00:13:38 **Derek**

Again, Google Bard's going to give me three different drafts. So, it's a little bonkers, guaranteed at least one of these is wrong. But again, it helped me think through in terms of my learning objectives, where might the AI tools play a role? And certainly all of the computational stuff, there are tools out there that students can use. I already teach students some tools to do some of those computations, but now I've got tools that can also talk about research questions that can look at data that can visualize stuff.

00:14:06 **Derek**

So, there's lots of areas where AI might overlap. And so, I ended up with some decisions and some of these are very similar. I'm going to teach with the tools. I already teach stats with tools anyway , so that makes sense. I need to teach students how to use the tools well. So, I'm going to build that into some of my low stakes activities. I'm also going to use the tools to teach statistics. I can have ChatGPT, generate a whole bunch of graphs and have students do some analysis.

00:14:31 **Derek**

Each student can get their own data visualizations to analyze, in fact, because of ChatGPT. We'll do some peer review for the same reasons as before. I'll ask students to document their use. For this assignment I already have them do a designer statement where they talk about their process for creating the infographic. And so, I'll add this to that and again, I might need to reevaluate the rubric a little bit.

00:14:52 **Derek**

So, I ended up with similar types of decisions, but that's just me. Again, you may find yourself going in different directions, but what I'd like to do now, I want to hear from a few of you before I share more. There are a number of really hard questions asked in the text chat that we may get to. But I'm curious what struck you when it comes to thinking about your assignments this fall. Robert?

00:15:12 **Robert**

Thank you Dr. Bruff. One of the things that I kind of was wanting to ask you is that as you're describing using as you have the AI in your class, it's kind of sounding like the creation of an added layer between the students and the content that they're using the AI to interface with the content that's out there. And then the AI creates some writing and then the students evaluate the quality of the writing and you evaluate the quality of the student's evaluation of the writing.

00:15:49 **Robert**

So, we've created a whole new layer, an intermediary for the student as opposed to the student being the one who goes into the library databases similar to Elicit , and they click through with all their human error and human inefficiency to go down the wrong rabbit holes. And then still using their subjective evaluative criteria, their human spirit, they self-direct to go down different avenues.

00:16:21 **Robert**

No , we take care all that faster. We'll get the AI to do that business, produce results. And then the students, what is really frustrating to me is that the students are expected to be in some kind of higher position of evaluative authority than the stupid AI robot. But really they're not because the AI has more stuff memorized than the student does.

00:16:44 **Robert**

So, all of this process benefits I don't feel like so much the student, but it definitely benefits the AI to get better about following directions when it's input by its user. So, that's kind of my question. I want to hear about the added interface argument against AI. Thank you.

00:17:04 **Derek**

Sure. And I'll try to respond to that. One answer is that again, the AI doesn't know stuff, right? It has looked at a lot of text and it can string together words in sometimes useful ways. And so, you can give it under certain circumstances depending on the tool you're using and what kind of input you can give it. You could give it a 12-page PDF, a journal article and say, summarize this.

00:17:31 **Derek**

And so, for me as a working professional, I might find that super helpful. I'll read the summary and then I'll make ... one, do I believe the summary anyway? If I find that the summarizing tool is generally useful, then I might use it and then base some decisions on which papers to read in depth. Our students though wouldn't know that. It's going to be less useful to the students.

00:17:53 **Derek**

On the other hand, when our students, we give them a whole bunch of reading and they're struggling to make sense of it, a tool that can rephrase a sentence and try to explain it in simpler terms. A tool that can summarize an article, and give you the main points and then you can then see if those points make sense to you or not. I think an enterprising student who is using these tools to help them do the reading actually could get some value out of it.

00:18:21 **Derek**

And so, I don't think of them as a barrier keeping the students from the reading, but it's more like a set of annotation tools they can apply to the reading. That's how I would think about it.

00:18:33 **Derek**

Now will students do that? I don't know. I think we've got to create the kind of assignment structures that are going to guide students to use the tools in that way. It certainly could be a kind of Cliff's notes that's , I've read the three paragraph summary, I don't need to do the reading. That's not helpful. That student might not have done the reading anyway though .

00:18:51 **Derek**

And so, I am looking for the use cases where the tools can help enlighten things, can reveal things in the reading or whatever the assignment is. It may still not be your cup of tea, and that's fine. But I think the thinking in it as a technology that sits alongside the reading, but not between you and the content, I think is important. Theresa.

00:19:17 **Charis**

Thank you. Hi. Charis. So, I felt a little bit stuck because I was thinking about how a lot of my content is really just content. It's not kind of creative or evaluative. So, I teach psychology, we have a lot of concepts and usually what I do to assess students is I ask them to generate personal examples or personal applications of the concepts and AI can do this.

00:19:41 **Charis**

And so, I honestly really felt stuck. I felt like AI would completely undercut my ability to find out if the student actually understands the material or not. I plug in multiple iterations of my prompts and assignments into ChatGPT. I notice that as people already know, it sounds very confident, but it doesn't stand up to pressure all the time.

00:20:03 **Charis**

So, if I challenge it, it'll be like, "I'm so sorry," and then it'll give back some other answer. But I would say in my class it would probably get a B. The student would for sure pass the class and the student would probably get a better grade than the student might get on their own. So, it's really hard because I do feel stuck and I don't want to penalize the students who are trying to do the work themselves and yet doing worse than the students who are cheating.

00:20:30 **Derek**

Yeah.

00:20:31 **Charis**

Yeah. I just felt really stuck.

00:20:33 **Derek**

Yes. Are you teaching online?

00:20:36 **Charis**

Yes. I teach in person and it's a little bit easier to deal with it in person because when students talk in class, they're actually using their own experience, their own brain.

00:20:43 **Charis**

But online, they can do all my multiple choice with AI. So, I reduced the point value of those things. I have them watching a lot of videos because I know that AI can't watch videos yet, but they can still download transcripts and AI can read the transcripts.

00:20:57 **Derek**

We're always like one step behind. I guess what I feel like is my students who are motivated because of their intrinsic motivation, they're doing the work because they want to learn. My students who feel overwhelmed, even if they think of material as interesting, if they're overwhelmed by life, they're just not going to do the work.

00:21:15 **Derek**

Yeah. And part of what you're saying is that you don't want the students who are trying hard to get a worse grade because they're trying hard. Yeah. Eric?

00:21:24 **Eric**

So, a lot of our conversation have been about things that are text oriented. And I'd like to get your opinion on something that's completely different being a mathematician. In the math and sciences area, there's a lot of cases where there's a presentation of information. We ask students to go ahead and attempt to duplicate this, whether we're balancing a chemistry reaction or doing a polynomial equation.

00:21:51 **Eric**

And then there's evaluation . And it strikes me that when I play around with AI that the technology is good enough that it can do some of the tutoring and most perhaps of the homework evaluation. And so, I wanted to get your input on what do we know about, say the flipped classroom in STEM, places where you're getting an introduction from watching a video, it doesn't even have to be my video.

00:22:22 **Eric**

And you're getting your homework evaluated by some sort of tool and we're saving the classroom time for clarification, inspiration, coaching, motivation, trying to go ahead and build a sense of community and grit, to go ahead and make it through another round of going home and watching the video and doing the exercises and having the AI tell you what exercises you got wrong and so on.

00:22:53 **Eric**

It seems like what I've been doing in the past where I walk around the class and see how people are doing and I grade homework every week is entirely obsolete, but I'm not certain how to use artificial intelligence to take out that drudgery and turn myself into more of a motivator and coach.

00:23:18 **Derek**

Yeah, I mean, people have joked about this, but one worry is that we'll have students who are submitting homework assignments entirely written by AI and faculty who are grading those assignments with feedback written entirely by AI. It's just people pretending to be in the same room together when in fact the robots were talking to each other. Yeah.

00:23:39 **Derek**

So, two minds, on the one hand this seems incredibly transformative and disruptive. On the other hand, two years ago a student who wanted to get out of doing their math or chemistry or engineering homework had lots of options for getting out of their math, chemistry or engineering homework.

00:23:55 **Derek**

The chat tools make it a little easier to get some answers but doesn't change the fundamental equation. And so, there was some conversation right in the text fields, like how do you detect plagiarism. Well, students could always have someone write something for them that would be really hard to detect. I want to panic where we have to panic but not panic where we don't have to panic.

00:24:15 **Eric**

Well, I'm not panicking, but it just strikes me that reading homework is somewhere between obsolete and silly. I mean there's other ways to accomplish that goal.

00:24:27 **Derek**

Yeah, a lot of STEM educators already use Aleks in mathematics and there's something about an Al I think in chemistry. There's a lot of tools out there that will generate lots of homework problems for students and then graded automatically give the students feedback and then point them to another set of questions that are tuned to where these kind of light adaptive learning systems, they're not fully adaptive in the ways that some are.

00:24:50 **Derek**

But that's a great way for students to get a ton of practice. Khan Academy is developing a little AI sidebar tutor that's going to sit there and coach students through working through problems. How well will it work? Probably pretty well. Sal Khan's not an idiot. It's going to be decent.

00:25:07 **Derek**

And so, yeah, I think there's a lot of opportunities for students to get more practice and feedback from these tools. I think having that flipped classroom allows you to spend that in person time differently. You're already doing that it sounds like. I don't know that that's going to-

00:25:22 **Eric**

Well I actually haven't taught anyone anything in five years long story. But if you have any sources for this, any things that you think are inspirational or perhaps on the right track, I would appreciate knowing it because I actually will be going back to the classroom full time fairly soon. I've been on reassignment for a long, long time.

00:25:43 **Derek**

Let me hear from Kelly first. Kelly.

00:25:46 **Kelly**

Hey Derek , good to see you. I was at the encore seminar with Sureta and Raul back in spring, so thank you for coming to Mt. SAC to share with us. You had asked about assignment makeovers and I thought it might be helpful for folks just to hear about one thing I've been doing since spring into my classroom and one thing I worked on.

00:26:03 **Kelly**

So, one thing I've been doing with students is I've been having them have a conversation with artificial intelligence, James Madison. So, I have them read two of the Federalist papers and then after they read that and we have a class discussion about it, they enter into a conversation on their own with this AI bot that has learned through all of James Madison's writings. And they ask questions of the AI bot about the two papers they read and they're also allowed to and required to ask some fun questions too.

00:26:37 **Kelly**

And then they provide to me as their homework assignment, their chat log. And that has actually been really cool because it provides immediate and individual feedback for them with the specific questions they had about the reading.

00:26:53 **Kelly**

Because it's really dense and tough reading and it gives them that kind of individual learning experience that they may have had a question about this one sentence in the third paragraph, what did that really mean? And we didn't get to talk about that in class or they didn't have that question in their group.

00:27:10 **Kelly**

And so, they're able to learn in that way and they love it. They really did not love reading the Federalist papers. None of my classes loved that assignment prior to introducing the AI tool. And now students absolutely love this assignment. So, that's been a huge success.

00:27:28 **Kelly**

And then just doing this assignment makeover that you gave us, I have students work on, it's a larger assignment where we go through a whole series of learning about civil rights and as part of that, I teach political science, by the way, if you guys hadn't picked that up already. And one of the things that they do is they have to learn the kind of definitional structure of unjust law and then they have to look at modern day laws and see if anything meets those conditions.

00:27:57 **Kelly**

And so, I was using the AI tool to see if that could be used to help them research modern day laws because sometimes they stumble. So, I have some students who maybe they're very aware of current events and they can kind of do that assignment really quickly and they pick up on that and other students who that's a really challenging assignment. And they just sort of google it, I know when they've done that because I know what that answer is.

00:28:22 **Kelly**

And so, I used ChatGPT while we were in that 10-minute break. I got a variety of answers. They're not like amazing, but variety came up and there were different things. And so, it may be a launching board to help students at least start thinking about different options and giving them a way to start that research to dig deeper. And so, that might be something I retool.

00:28:45 **Derek**

Thanks for sharing Kelly . And you're reminding me, someone asked in the chat about kind of where these tools might be going. I feel like we're going to see a lot more tailored tools that are designed for specific purposes.

00:28:56 **Derek**

One of the things that makes ChatGPT useful but also frustrating is that it's so open-ended, it can do so many different things. So, it's hard to learn what you can get out of it. It's hard to think about how you would use it intentionally in your own courses.

00:29:09 **Derek**

But something like that, character AI, like it does this thing using AI and so it's a lot easier to design an assignment around that one type of behavior, that one type of task. And I think it's easier to direct students to use tools like that that are more targeted.

00:29:24 **Derek**

And so, that's why I like a tool like Elicit. I could have Bing try to approximate that, but I like kind of knowing what I'm getting from it. And if we can recommend tools like that to students, to kind of channel them into using tools in particular ways for particular purposes, I think it serves them well. Cambis.

00:29:40 **Cambis**

Thanks, Derek. Derek, in this day and age , at least at Mt. SAC, Where there is a push for offering more online classes . And my particular comment here is more asynchronous classes because that's where students the highest field rate and a fellow colleague of yours in the math department as ... but this question is also I think , relevant to any one of us teaching asynchronous classes.

00:30:02 **Cambis**

I know that there have been, I think Jenny mentioned in some apps that can easily take a picture and the answer is right there. And obviously with ChatGPT, it seems to me that finding the classic questions of asking, what's the answer? Let's say , as you mentioned for the role reduction of the matrix, those become more irrelevant in terms of those of us who are teaching asynchronous courses. As a person who does that myself. So, I quit asking those type of questions, I'm asking for intermediary steps to those.

00:30:31 **Cambis**

But then again, you have Wolfram|Alpha, the paid version shows you every step by step of the problem.

00:30:37 **Derek**

Will write out the solution and it'll show work for you.

00:30:40 **Cambis**

Exactly. So, that's much more sophisticated. So, are there any recommendation, best practices that you have to make those asynchronous courses or even synchronous courses less prone to students using outside resources in particular.

00:30:58 **Cambis**

I mean they can use their best friend who's a genius in math , but using that is detectable that they can detect or completely for them to avoid using it. But designing exams and assignments or projects-

00:31:10 **Derek**

Well, and I've been thinking about Theresa's question about all the prompts I would ask in my class currently are ones that ChatGPT can answer at a B minus level. That's problematic.

00:31:21 **Derek**

So, I heard this advice at a conference recently and at first it rubbed me the wrong way, but I think there's something that we might be thinking about here that would be useful. So, the idea was if you're going to have students write an essay and you want to make sure they wrote it, that you actually have them do that in a Google doc where they make you a collaborator and then you can see all their edits. You can go to the revision history.

00:31:43 **Derek**

And there's actually a tool, I forget what its name, but it'll actually add into Google Docs. It will kind of give you a visualization of how the document has changed as it was written at a very granular level. So, you can see very easily if someone cut and paste a huge chunk of text into that.

00:31:59 **Derek**

I feel like that's a little bit of surveillance that I would be uncomfortable doing, "Students, you must use this tool and you must basically write the paper in front of me where I can watch you do the whole thing."

00:32:10 **Derek**

I get the desire for that though, to have some kind of paper trail that you can analyze. But one of the people at the conference said , well I would be uncomfortable with doing that, but I can imagine collaborating with my student on a piece of writing where they're giving me drafts and I'm giving them feedback. And Google Docs would be a great place to do that where I can highlight stuff and add comments and make suggestions.

00:32:35 **Derek**

I could let the student be the lead writer, but I'm kind of the writing coach and we're doing this in this collaborative space. And as a byproduct, I've got a paper trail that I can look at if I'm suspicious about something.

00:32:47 **Derek**

And so, it got me thinking about kind of co-writing as an idea. How can we engage students in a sequence of activities where we're kind of in the space doing that together? And that doesn't have to be just in a physical onsite classroom. If you've collaborated with a colleague writing a document together in Google Docs, you know you can do this asynchronous.

00:33:09 **Derek**

And so, I don't know that that solves anyone's problems on its face, but thinking about that approach to assignment design may be really useful. How can you structure assignments that build on them over time where you are kind of in the assignment with the students in a way where you can be helpful and be useful to them, but also have a sense that they're kind of participating in good faith in that sequence.

00:33:31 **Derek**

So yes, a determined student is going to cheat. It's almost impossible to stop that, but I can imagine this kind of approach being a little bit helpful for some of these questions.

00:33:41 **Derek**

So, Planet Money, the podcast about financial stuff earlier this year, tried to make a Planet Money podcast episode using AI tools. They had a three-part series where they detailed their efforts. They used AI writing, they had the AI generate questions for their guests. They replicated one of their host's voice using an AI voice synthesizer, fascinating experience well worth the listen to the three parts.

00:34:05 **Derek**

At the end of the day, it did not produce a Planet Money level podcast. It did not meet the quality bar. It came close in a lot of really interesting ways. And so, I want to put that out there as kind of a challenge. These tools have some potential to kind of change a lot of professions and their workflows. I don't think they're there yet in many cases, but they're going to be creeping in that way.

00:34:27 **Derek**

And then the other side is a quote from a blog post by Ted Underwood, who is not in fact dead. As he found out earlier, he had a really great blog post about how we might have to change what we teach.

00:34:37 **Derek**

He said, "We will also need to devise new kinds of questions for advanced students. Questions that are hard to answer even with AI assistance because no one knows what the answer is yet. These are assignments of a more demanding kind and we have typically handed undergrads, but that's the point. Some things are actually easier now and colleges may have to stretch students further in order to challenge them ."

00:34:58 **Derek**

So, we may have to do a lot more course redesign and curriculum redesign in the coming years because of these tools. That's kind of what I'm hearing from you all today. And it's not work we have necessarily the time and the resources to do today, but I think it's work that we'll have to engage in.

00:35:18 **Christina**

Thank you for listening to the Magic Mountie Podcast, and don't forget to share your favorite episodes.