[00:00:00.510] - Host
From the Faculty of Pharmaceutical Sciences at UBC, welcome to Trxending, a podcast dedicated to exploring trending topics across all areas of pharmaceutical sciences, including research, practice, education, and community. Our episodes are recorded on the traditional, ancestral, and unceded territory of the Musqueam people. We encourage you, wherever you're listening, to also take a moment to consider the land you're on, the history, the original caretakers, and and your relationship to it. As generative AI becomes more ingrained in everyday life, from the workplace to the classroom, emerging opportunities present themselves for AI's use within pharmacy education. Today, I'm joined by two educators at the faculty, Fong Chan and Jamie Yuen, who are exploring generative AI's use within pharmacy education through an exciting project called GenRx. Together, they explain how developing a prototype using generative AI to simulate virtual consultations for pharmacy students might enhance those students' clinical skills and educational experience. If you are interested in further details regarding the GenRx project, please visit the link in the description. And now let's hear from Fong and Jamie.

[00:01:12.930] - Fong Chan
Hi, my name is Fong. I'm the assistant director of the E2P PharmD program, and I'm also an assistant professor of teaching. I teach mainly in year 2 in the E2P PharmD program. I teach as a module co-lead in the nephrology module, and in 2 in integration activity in cases.

[00:01:32.470] - Host
Great. Thank you for joining.

[00:01:34.810] - Jamie Yuen
Hi, everybody. My name is Jamie. I am a clinical pharmacist and a lecturer with the UBC Pharmacist Clinic. I also get to serve as the assistant director of the clinic. My role is a bit of a mixed bag, so I get to provide care for patients. I get to engage in some practice and pharmacy education type research, and I also co-lead the Nephro module with Fong. And I teach in third year as well, an elective with Dr. Jillian Reardon. Aimed towards primary care practice for pharmacists.

[00:02:02.580] - Host
Awesome. Thank you so much for joining, both of you. So yeah, we brought you on today to talk about a project you've both been working on, the GenRx project. And as I understand it, it has to do with generative AI in pharmacy education. That's correct?

[00:02:15.990] - Fong Chan
Yeah, that's right.

[00:02:17.100] - Host
Awesome. So I was wondering if you could give us a brief explanation of the project and just describe how it integrates with pharmacy education in the faculty.

[00:02:27.310] - Fong Chan
Sure, so the GenRx project is creating a web-based platform that's leveraging GenAI technology, and it's hoping to conduct a virtual patient interaction within pharmacy education. So basically, it's using GenAI to create a patient persona, which then can interact with a pharmacy student and simulating a patient care interaction that they might see in practice. So things like interviewing, counseling, educating, and providing clinical recommendations to optimize a patient's medications.

[00:03:00.800] - Host
Great, very interesting. Do you want to add to that at all, Jamie?

[00:03:03.840] - Jamie Yuen
Sure. So some information, some of the motivation that came behind that is in the pharmacy program, and I guess also in other health professions education programs, they'll have standardized patient actors to help students get some practice interacting with a real human being as they would in practice and on practicum. And part of the GenRx project is to try to complement that experience with

virtual patients. Of course, not to replace the standardized patient actor experience, but just to provide students more opportunities for practice.

[00:03:30.510] - Host
So it's kind of augmenting what you previously did with real patient actors, just using generative AI to kind of supplement that. Is that correct?

[00:03:37.460] - Jamie Yuen
Totally. And I think, you know, being able to offer more accessible type of practice, forms of practice.

[00:03:44.910] - Host
So is this something, just 'cause I'm new to this whole thing, is this something you would potentially use for exams or is it practice or is it kind of like a mix of both? Or you kind of just, uh, I understand the project just started this year. Is that right?

[00:04:00.000] - Fong Chan
Yeah, the project started last year. Um, oh, last year.

[00:04:03.380] - Host
Okay.

[00:04:03.640] - Fong Chan
Okay. But it hasn't even been a full year yet.

[00:04:05.870] - Host
Yeah. So it was very much like the, it's new, the first stepping stones into, into kind of this thing. But, um, within the project itself, are you using it for more of a practice for students or is it like potentially gonna be used for exams or is it kind of like a trial and error approach?

[00:04:21.520] - Fong Chan
Yeah, I think the initial thought was that it'd be for more practice, but I think that it does have the potential to be used in assessment and in examinations. But that would have to be, I think, a lot further down the line for us to consider. So right now it'd be a practice opportunity.

[00:04:37.170] - Host
Right, right, right.

[00:04:38.020] - Jamie Yuen
Yeah, our current approach is to really, you know, trial small scale and then scale up after that. Um, our original thought actually— so Feng and I connected about 2 years ago with this idea, and I kind of went from there. We were very fortunate to have some funding support from the faculty to kind get started and explore that area before the TLEF. And, you know, with this, I feel like in the ideal situation, if money was no object, we'd be able to, you know, pour a lot of time resources into it, right? And perhaps allow for the opportunity for exams or assessment. Interestingly enough, we were at the CPER conference, which is a pharmacy education conference, back in June, and we were connecting with some colleagues. And interestingly enough, there was somebody from the Examining Board of Canada who was interested in this type of approach and how that might be applied for, uh, the licensing exams. But I think as it stands right now, it's still kind of a bit further down the line, right?

[00:05:29.330] - Host
Right, right. Yeah, I imagine like maybe within the scope of education itself, it's something many disciplines are looking into. But, um, it's very cool that we're taking the first steps, um, down that road, I guess.

[00:05:40.600] - Jamie Yuen
Yep, absolutely.

[00:05:41.640] - Host
Um, speaking of the project itself, uh, I know it's been like It started last year, so you've been like, I guess, half a semester into it, roughly?

[00:05:50.800] - Jamie Yuen
We're in August now. Let's work backwards. So, I think we got some funding last year and we hired 2 students with the faculty funding back in May or June.

[00:05:58.570] - Fong Chan
May, I think.

[00:05:59.220] - Host
Yeah.

[00:05:59.390] - Jamie Yuen
Okay.

[00:05:59.570] - Host
Okay.

[00:05:59.970] - Jamie Yuen
Okay.

[00:06:00.200] - Host
This far, have you run into any like obvious like challenges or obstacles with the project or is it kind of— I mean, I just want your take on your experience so far. I know you have like a lot more to go because it runs into 2026, but this far, have you— how's your experience with it been?

[00:06:15.940] - Fong Chan
I think like with our initial challenges in general, I would say is really understanding how GenAI works. I think it's one of the initial challenges that we had. And also in knowing that having the right personnel as a part of our GenRx project team and bringing them aboard and then figuring out like collaborations with other people. So we have been able to collaborate with other programs within UBC and one of the areas we collaborated with, with, with UBC's Cloud Innovation Center. And they were the group that helped us to sort of create the initial prototype. They were doing the original coding because we do need to have expertise in that area. So, I think that's one of the initial challenges that we came across. Something else to add, Jamie?

[00:07:04.500] - Jamie Yuen
Yeah, we had this meeting with the Cloud Innovation Center or the CIC. And I think, you know, within our project team, we kind of had an idea that we were all on the same page about. And we had a series of meetings where they wanted to hammer down kind of some technical details and how it looks like for the student experience, the instructor experience that I think we had kind of in our minds, but we didn't fully articulate. So I think some of those challenges was really, okay, let's really commit and nail down, you know, how it looks like for the student, how it looks like for the instructor, and, you know, what the look and feel should be.

[00:07:32.500] - Host
Okay, I see, I see. So this sounds like it's generally going beyond the use ChatGPT to, you know, create a fake person kind of thing. It's actually some more meat behind the system, is that right?

[00:07:43.900] - Fong Chan
Yeah, and I think more specifically to pharmacy education, I think one of the things that we had to think about was how to write pharmacy cases that would actually fit within GenAI, because basically we have to know how to write the correct script, and the script meaning a prompt, right? Because the prompt is what the large language model that we would use would be able to understand and ingest the information. So that was where we had to actually understand how to write a patient case and

then incorporating that within the use of how the GenAI would use that case. So that was also a challenge as well in understanding how to create it.

[00:08:19.540] - Host
Right, right, right. Up to this point, have you encountered any challenges as to the, like, the authenticity of the AI, what it's outputting? Um, because I know there's like, when I use ChatGPT, there's always like, sometimes it's not always correct or something is not always authentic depending on the prompt or depending on, um, the context of the, the questions involved.

[00:08:40.440] - Jamie Yuen
Yeah, um, totally. I feel like I'm laughing right now because it was a very, um, long iterative process to really nail down which large language model we want to use, and a lot of trial and error. So full credit goes to our two students we hired, Neelam and Noor. They did a lot of the testing with different large language models such as ChatGPT, Claude, I think Gemini was on there as well, and Llama. And then I think each one had its pros and cons in terms of what it would spit out back at you and how it would interact with you. Yeah, because of the nature of what we're trying to do, we want, you know, some sort of quote-unquote human emotion or some sort of expression behind it. And I think some of them were more, um, you know, ironically robotic in their response, and, and some were maybe a little warmer. Um, so we did have to kind of test back and forth, and we also had some direction from UBC as to which large language model they would go with for UBC projects. Okay, that helped inform, you know, the direction for the GeneraX project.

[00:09:36.700] - Host
Uh, very interesting. Um, yeah, I know I get frustrated all the time with, with ChatGPT even now because it just doesn't output what I want it to. So I was curious about that.

[00:09:46.320] - Fong Chan
Yeah, well, in the iterative process, we would go back and troubleshoot and make changes and test it out again to see if it works. Like, an example was really funny was that one time I was testing out the system, we created a patient persona, and I was chatting with it, and it responded in Spanish. And that was totally unexpected. So we had to then figure out, like, what happened there. And so, yes, we do do a lot of iterative changes based on the trials that we have gone through.

[00:10:15.750] - Host
Right, right. And I suppose like the, the models over time have changed as well because they're like rapidly coming out. So it's probably helped a little bit with the accuracy and the, um, yeah, acting like a more real patient, if that makes sense.

[00:10:28.740] - Jamie Yuen
And I think, um, one of the advantages we have on our team is, uh, support from the OETLD department, so Office of Educational Technology and Learning Design. So we have Bri and JP from there, and Bri is really helpful in terms of walking through the technical aspects of it and supporting the students when it comes to some of the troubleshooting. Um, you know, Fang and I not being the technical experts, we kind of have limitations in terms of what we can offer for troubleshooting and support. But, um, it's been really nice working with everybody.

[00:10:55.010] - Host
Yeah, I actually had Bri and JP on actually like several months ago. I think the project was just in its infancy, or maybe not even started then. So I talked to them about the, the, uh, kind of generative AI aspects of Pharmacy back then. So it's interesting to come back to it now and see how the project's like rolling along.

[00:11:12.080] - Fong Chan
Yeah, and that's part of like really understanding how GenAI works and having a really strong team to be a part of your project.

[00:11:18.720] - Host

Great. Um, with that being said, what are you looking forward to next with this project, the kind of next phase of it?

[00:11:27.430] - Jamie Yuen
So many things. I think, uh, top of mind, number one would be, um, further feature development. So we're looking into— so actually, currently our platform is text-based only, and of course we want to make it more, more reflective of the real-life practice. So, right, um, one of the big features we're hoping to incorporate is voice. And speech, so being able to allow students for the verbal communication and practice doing that. Kind of the look and feel of the platform right now, want to kind of upgrade the user interface a little bit. Again, more so for the user experience.

[00:12:00.380] - Host
Right.

[00:12:01.760] - Jamie Yuen
I feel like rolling it out, just trying it, and getting some feedback from students and instructors would be very valuable for us.

[00:12:07.540] - Fong Chan
Yeah, for sure. And I think the other component, too, is adding on a physical assessment component. While we agree, obviously, physical assessment should be done in person, Given that we don't have as many opportunities for our students to do physical assessment in person and having patient actors with them to practice on, having a virtual option is something that can complement what we would do normally in person. And so, prior to this project, I was looking at different simulations that were available on webpage— or sorry, online. Options were to have some sort of physical assessment simulation. So, we're hoping to incorporate that as a part part of this platform as well. So that's another feature we're hoping to add to the platform.

[00:12:54.070] - Host
Oh yeah, that's brilliant. That would be really interesting actually. Um, yeah. Oh yeah, I was gonna ask, uh, is there like— since this project's been going on a little while, have you seen any like measurable or anecdotal impacts on like how the students are performing now that they have had a little bit of, uh, generative AI like practice? Um, has that translated into their performance with like real assessments at all? Or something kind of too early to notice, or how is that factored in so far?

[00:13:20.690] - Jamie Yuen
The million-dollar question, Justin. How much does it really impact the real-life performance?

[00:13:24.410] - Fong Chan
Right.

[00:13:25.280] - Jamie Yuen
That's a great question. We haven't really gone there yet. Okay. Last winter, we had trialed it in a small group of students in the primary care practice elective just to kind of get their sense from a quality improvement type of lens. Yeah. I mean, I would say that they expressed the desire for more of that in the program, and they found that it could be reflective of a real-life interaction. So I think building on that, hopefully we will see in the future. Perhaps some performance improvements, some impacts?

[00:13:52.140] - Fong Chan
I think right now the focus of what we're looking at is more feedback on the platform so that we can make changes to it. Hopefully we will get to the point where we can evaluate it and compare it to practice and how students are, you know, comparing it to how students would do in terms of assessments, and also, you know, whether or not that's improving their practice when they're out on practicums and out out working. So hopefully that will be an evaluation we can do at a later point in time.

[00:14:23.350] - Host

Great. Yeah, yeah, I'm looking forward to it actually, because, uh, I don't know, it's always interesting to hear like the impacts later on down the line. I know this is like a very, very new area, so, um, the trial and error phase is happening right now, and then it would be exciting to see the impacts later on down the line, I think. Um, moving on to a more like general question, um, surrounding generative AI itself, How has this impacted pharmacy education so far? It could be in the project or it could be outside of the project that you notice, 'cause I know you work with other colleagues that use generative AI. Pretty much everybody uses it now for work as it's getting more and more developed and ingrained in workplace culture. But how have you seen it in pharmacy education from a general standpoint?

[00:15:09.770] - Fong Chan
Yeah, I think that it'll be a huge impact on pharmacy education overall. Obviously our project focuses on patient care patients, and it's using GenAI to actually create the patient persona. But our other colleagues, I would say, are working in different areas on projects and research within AI itself. We do have a colleague that's working on AI literacy and understanding students' literacy around AI within pharmacy education. And then they're also looking at, you know, how it could possibly be used within different assignments within pharmacy education. I also know of another group that is using AI to create cases. So that's like creation of materials that we can use in pharmacy education. And I know that not maybe specifically within our faculty, but in pharmacy education and healthcare education, it is being used within assessments. And where I see it being used is in creation of grading rubrics. And as well, actually marking student material, which is interesting. I don't believe that we have anyone within our faculty currently doing anything with AI and assessments, but I could be wrong.

[00:16:33.450] - Jamie Yuen
Not evaluation anyway. Maybe, you know, maybe personally they're trying to create some questions to kind of generate or brainstorm. I feel like it's a good use case if you're kind of stuck and as a writer perhaps, or you wanted to create some material and you just have some general bullet points or ideas to get you started. I feel like GenAI could be helpful to kind of launch you to the next step. I feel like within the classroom as well as students, obviously, you know, they fully embrace it.

[00:16:58.370] - Host
Right.

[00:16:58.850] - Jamie Yuen
I know different courses will have their different stances on, you know, the applications and, you know, how it's allowed to be used or the appropriate usage of GenAI. We can't go backwards, right? So we have to kind of embrace it and, you know, help complement it. And I feel like one of the things we should do as, you know, faculty members or educators is to prepare students for practice with clinical AI tools, because that's also one of those things that are being developed or being used right now.

[00:17:26.330] - Host
Yeah, well, it's developing so fast that I think it's, it's, it's almost like we're playing catch-up on the regulatory aspects of it, or like the ethical training parts of it, I feel, um, in a lot of spaces, not just education.

[00:17:38.930] - Jamie Yuen
But, um, we're very lucky though at UBC. I think there's a lot of attention and focus and prioritization of Gen AI and how it fits within higher education. So I feel like, um, we're very fortunate to have that type of leadership and Yeah, for sure.

[00:17:52.780] - Host
For sure. Circling back actually to the GenerEx project, I had one more question that I was thinking of. In terms of like generative AI biases, because I know this is kind of a difficult obstacle to overcome for a lot of things. Have you noticed any bias in like when it's generating either a patient response or a patient itself, like in one direction or another? Because I've heard of this from just anecdotally from, from people. I'm wondering if you experienced it yourself within this project.

[00:18:26.730] - Jamie Yuen
I don't know if we had much of a lens on it, to be honest. Um, and I have heard that anecdotally as well in terms of the content, because I think how it's trained, the model, and the information that's out there, it could, you know, potentially, um, cause or lead to biases. Um, and I think as, again, as educators, I think our responsibility is to make sure things are as accurate and balanced as possible from our perspective. Objective. And of course, we'll have our own biases, but that's another story.

[00:18:52.770] - Host
Yeah, just something I was just thinking of at the top of my head, but, uh, um, be interesting to see if it comes to light down the line. Moving on, the exciting question: what excites you about the future of AI in your work?

[00:19:06.920] - Fong Chan
I think I'm probably most excited about the fact that AI has been able to, um, change and be updated and so quickly. I mean, even looking from the time that we had started the initial work, which is, you know, about a year ago, the initial limitation at that time when we were looking at the prototype was that we might just have to have kept it as text-to-text in terms of response. But the acceleration of how the technology has developed in the last, like, even couple months, yeah, we're now able to incorporate voice. Like, at that time, it was like a thought that was like a pipe in the sky for us. And we're like, well, that would be great, but maybe in a few years. But that's not the case at all. Less than a year, the opportunity to switch over to voice is already available. And we're going to start working on that with our next upgrade for the prototype. And so that's very exciting. So I think one of the most exciting things is how fast it's sort of evolving. But in that, I'm also cautious as well because we have to keep that in mind too.

[00:20:13.020] - Fong Chan
But it is exciting because you don't have to wait to implement some of your ideas because, right, right. In some cases, you do have to wait for a little bit of time. Time.

[00:20:20.240] - Host
Exactly.

[00:20:20.960] - Jamie Yuen
Yeah, super exciting. Um, same thoughts as Fong. I feel like I'm gonna blue sky a little bit. So ChatGPT-5 came out and was announced yesterday, right? Yeah, I have had a— haven't had a chance to play with it yet, but I feel like because of the rapid pace of the development, um, and evolution of the technology, you know, one day maybe we can quickly spin up a virtual case with, you know, a video of a patient approaching you and having more of that immersive experience. You know, perhaps one day, you know, if costs again money is no issue, we can have a virtual reality type of experience to really immerse the student into that scenario. So I think anything is possible with that. Of course, hopefully the costs and the economics will be in favor of wide-scale adoption and usage. But I feel like we're always playing catch-up, like you mentioned. It's just really— there's so many use cases for it, and it's just whether or not we're able to do do it for this next academic year, or we have to kind of plan for the future, and then by that time things have changed drastically even more.

[00:21:25.970] - Host
Right, right, right. Um, speaking of the future of AI, um, I wanted to ask you a little bit about agentic AI. I know now we're kind of in this generative AI phase, um, and again, I'm not an expert, um, but as I'm aware, there's kind of like, kind of 3 main phases that we're going through. Right now we're in the generative AI phase. Next one comes the agentic AI phase, which basically is using AI as assistant, in assistant-type tasks. And now, and then further on, it would be, I guess, AGI, I guess, which would be mimicking a human brain, I suppose, depending on your definition. But I've seen a lot more in the news recently about agentic AI, using AI as a service, or like a, yeah, basically like an assistant to help you with a variety of tasks. Is this something you see helping within the scope of pharmacy education? Or I don't know, I just wonder your thoughts on that.

[00:22:24.590] - Jamie Yuen
I'm very cautious of my response. And I will say this because of the aspect of, you know, having a virtual assistant kind of, you know, perform work that you assign it. So one of the first things that would come to mind would be because, you know, in the nature of it being summer right now, a lot of our faculty members, educators are creating material content and planning for the academic year. And with that, we end up having direct-to-study students students, you know, work with us and perform tasks. Now, I don't want to ever replace that opportunity because, you know, we're here to serve the students. But I feel like there might be some use cases to help complement that type of work. So for example, if I'm doing some sort of research project and I want to do perhaps a quick lit review of what's out there, perhaps I can task the agent to help me with that, right? But at the same time, it's a good learning opportunity for a student. So again, I wouldn't want to take that away from them. So I'm very cautious in how I would approach this. Um, you know, if I were doing a chart review, for example, say for example at the clinic, I'm targeting a particular patient demographic and I want to see the pharmacist's impact on it.

[00:23:30.690] - Jamie Yuen
Um, you know, in the situation where there's no issues with, um, you know, privacy, security, perhaps we can task an agent to help pull some data for us and even help do a preliminary analysis to help guide or inform the project or the direction. So again, a lot of, um, possibilities. It's just how we see this fitting in society.

[00:23:51.360] - Host
Yeah, I mean, I guess it's the— there's a bit of a conflict because like you want, especially with young students or like, um, students on practicum or whatever, you want them to learn these essential skills themselves. Um, this is being taken over by some AI agent, it's not, not really helping the student advance their skills to the level they need to, which is kind of an obstacle that we all have to overcome. Um, agentic AI might be able to replace workers at the, like, base level, but those workers still need to, or students still need to build those skills in order to get up and learn to become a senior level, right? So it's kind of a weird place we're in, I feel, right now.

[00:24:31.280] - Jamie Yuen
Totally.

[00:24:32.390] - Fong Chan
Yeah, it was well said, Jamie, because I think that we do have to be a bit cautious about it. I mean, the idea of agentic AI, from what I understand, is like in generative AI, it's using prompts and looking at large data and analyzing the patterns, whereas agentic AI is actually looking at this information, but also being able to be creative, be able to make decisions. And so that is something that, you know, I would also be cautious not to use potentially if we could actually have one of our students help with that. So then that will help with their learning development as well. And also like even for myself, if I'm not using my own thoughts in terms of the decision-making and relying upon at AI, that would be sort of detrimental to me because you lose those skills when you don't use them yourself. So I think cautious, and I know this is something more likely in the future, though perhaps it's coming sooner than we think because of what the development of technology. But I do think I would be more cautious about it. And in terms of whether or not there's any research or projects, I think in our faculties using this type of AI, I don't believe so at this point.

[00:25:50.700] - Fong Chan
Um, all that I've been able to see within our faculty has been more generative AI.

[00:25:54.960] - Host
Yeah, it's kind of a very new, um, I guess, area in the AI field anyway. So, um, and like you said, it comes with those, uh, cautions too. So I imagine it's harder to approach than the generative AI aspect, which is very much used as a tool.

[00:26:10.370] - Jamie Yuen
But you're right that we have to think about it because I think, um, the rapid pace of, of the

development, um, we We want to try to stay ahead as much as possible, or at least prepare our students. Perhaps, you know, for example, if you're a first-year student starting the program, by the time you finish and you're a pharmacist, perhaps practice will look very, very different. And there might be some agentic AI usage in clinical practice. So, you know, where do we fit in as pharmacists? Where do we fit in as learners or residents? I think those are all good questions to ask.

[00:26:38.910] - Host
Yeah, I'll be curious to see how the next few years develop in terms of all of this stuff. Speaking of AI in education and teaching, I was wondering if you could speak more to the limitations you've seen so far, or that you expect to see in the future. I guess you've kind of touched on it a little bit with the agentic AI and being cautious with that approach to not sacrifice student learning. But I wonder if there's like other, other things on the top of your head that you might comment on?

[00:27:11.370] - Fong Chan
I think probably the most common one that we get asked in terms of questions about limitations is, is the confabulation or the hallucinations that can occur with the use of GenAI. So in those cases, we do have to be cautious because if you're using GenAI as, you know, an answer key, or if it's the answer for student learning processes, then you have to ensure that the information that's provided is accurate and is appropriate. So I think those are— that's one of the cautions I would say in using GenAI.

[00:27:47.830] - Jamie Yuen
I think one limitation is I feel like right now where we're at is the need for human oversight or review and kind of sign-off. Yeah, for sure.

[00:27:56.410] - Host
Yeah.

[00:27:56.730] - Jamie Yuen
I feel like at least for myself, I'm quite conservative when it comes to, you know, signing off on a work product or a draft that perhaps GenAI had a part in developing or creating because I want to be able to to speak to it myself and be confident in the product. So, you know, again, in the perfect world, but then that would be replaced if you didn't need me as oversight. So I think that's where I struggle and that's where the limitations might be.

[00:28:22.480] - Host
But at the same time, you need people with expertise to oversight this. So you can't— it's kind of weird. You know, you can't get AI to do everything from a base level because it might be taking taking people away who need to develop the skills in order to become an expert. And as an expert, you need to, or not an expert, but like someone proficient in your field, you need to oversee what the AI is doing. Because it's right, you're right, it's not always correct. Often it's not correct, actually, in my experience. I also use it like frequently in my work, and I'm always correcting it. I don't think there's rarely an instance where I just take whatever AI puts out and use it as is. It's always tweaked or fixed by me in some way.

[00:29:03.920] - Fong Chan
So yeah, and I think that that sort of speaks to the fact that it doesn't understand the context. It's not creative. And, you know, like, it just— it makes the answer based on analysis of a pattern, right? So then the context of, of the scenario might be that you won't give that answer normally if— even though that's the pattern, because you understand the context around it. And that's, I think, part of the challenge in using GenAI in being the answer, say, to a question or a scenario, like in pharmacy education, if there was a patient scenario and you were to actually use the GenAI to help to sort of answer, get an answer for that scenario, it may not understand the context. So therefore, if a learner is using GenAI to actually answer that case scenario, then they can fall into the trap where the answer is perhaps not correct because it can't look at the context and it can't provide reasoning. And that's part of what the student learner within pharmacy has to be able to do, is look at context and reasoning and then come up with the answer that way.

[00:30:09.020] - Host
Exactly. And that's what we as humans are designed to do, so we still have the edge, thankfully.

[00:30:13.690] - Fong Chan
Yes, for now.

[00:30:16.430] - Jamie Yuen
When are you releasing this, um, episode?

[00:30:20.000] - Host
Hopefully it doesn't move that fast. Um, last, last question, um, and again, you've touched on this, uh, with some of your other, um, some of our other dialogue in this episode, but just any final thoughts of how you see AI evolving within the scope of pharmacy education in future?

[00:30:40.580] - Jamie Yuen
I think I see widespread adoption. And I think I see this allowing students and educators perhaps to focus their time on other tasks or like higher-level creative thinking, like Fang mentioned earlier. And I think I will see a lot of collaboration between pharmacy educators and faculties. I think we all have our own expertise and scopes. But I think if we're able to collaborate and share our work, hopefully we can move forward at a quick quicker pace.

[00:31:08.040] - Host
Fong, do you have anything to add?

[00:31:10.060] - Fong Chan
I think it will help us in terms of being efficient in providing, you know, upscaling and education for our both pharmacists as well as pharmacy students, because the scope of practice of pharmacy is actually expanding quite quickly as well.

[00:31:23.780] - Host
Right, right.

[00:31:24.180] - Fong Chan
And I think in order to keep up with some of that education, I think using AI can help with that. Now, how it would be incorporated, we are going to see upcoming, but certainly I think I think going back to what our project is focusing on is providing opportunity to provide education and upscaling to pharmacists and pharmacy students where we don't have maybe the physical space or limited by cost and budget, where we can't have the physical space in person to act as a patient, you can then use this platform that is virtual, that's flexible, that can be accessed and practiced within the context of someone's home or outside of, the physical space. And so I think using technology in this way will actually help us with, um, the scope of practice that's expanding within pharmacy.

[00:32:14.690] - Host
Yeah, that makes sense, and it, it just brings down a lot of barriers to what you just mentioned. Um, well, I think with that we can probably end here. Um, thank you both so much for joining, and thank you to our listeners. Hope you enjoyed this episode, and hope you join us for next time on What's Trending in Pharmaceutical Sciences.