[Auto-generated transcript. Edits may have been applied for clarity.]
Welcome, everybody, to a very exciting launch of our fall series on assessment for deeper learning at the

Center for Innovation in Applied Education Policy at San José State University in the US.

We are very, very lucky today to have a distinguished panel to talk about a very important topic.

That topic is going to be explored broadly over the next 60 minutes with a series of guiding questions.

But the title of our talk today is "Making Sense of Machine-Driven Feedback in the Age of AI."

We're very fortunate to be here today with our experts in the topic.

And I want to start by just quickly noting that our panelists will include Dr. Fabienne van der Kleij

and Dr. Jill Willis and Daniel Taylor Griffiths, all who hail from Australia.

And we're grateful to have them. We will be moderating today, and working with our panelists to unpack today's topic.

So Dr. Carrie Holmberg, my colleague, and myself, Brent Duckor will be here as your guides on the side.

Thank you very much for joining us today.

Thank you. And I'm so glad for our experts to join us and for you to join us as well.

Before we begin, let's just work to unpack, unpack or talk about, common definitions, a few key terms and concepts.

And let's start with deeper learning. So when we talk about deeper learning.

We're talking about the skills and knowledge that students must possess to succeed in 21st century jobs in civic life.

For example, we're talking about the skills of critical thinking, problem solving, collaboration, communication,

that's being able to find, evaluate, synthesize, frame and use knowledge in new context and produce research and findings and solutions.

And when we use assessment for deeper learning, we're noting that we prioritize

this assessing of critical thinking and problem solving and collaboration communication as well as core content and basic skills.

So those are terms that we'll be using today.

You'll notice that sometimes we mix these terms up together and we think about them in different ways.

Some people call these ideas related to things like ambitious teaching.

Or they'll talk about things like authentic, performance-based assessment.

There's even people who would argue that some of this really must intersect how we think about

peer and self-assessment as ways for students to show not only what they know and can do,

but how they can reflect on that knowledge. So Carrie and I always take a moment in this series just to sort of remember that

there'll be lots of intersecting concepts being played out in this conversation, and we invite our listeners to learn more as we go through this.

It's my pleasure to give some information about our experts. I'm going to read the biographies of each. First, Dr. Fabienne

van der Kleij. Dr. van der Kleij is a senior research fellow within ACER's Center for School and System Improvement, known as CSSI

leading a workstream focused on evidence and innovation with a PhD in feedback and computer-based assessment.

Fabienne's work centers on the intersection of student learning, student voice, and digital technologies.

She conducts literature reviews, consults with key educational stakeholders,

and develops evidence-based tools like the School Improvement Tool: Elaborations for student engagement and wellbeing .

Before joining ACER, Fabienne worked as a research fellow in academia

at the University of Queensland and Australia Catholic University,

where she conducted research into educational assessment and teacher and school leader professional learning and feedback to improve student learning.

She has published extensively on assessment and student learning in quality,

international peer reviewed journal articles, practitioner outlets, and book chapters.

Fabienne was recently awarded fellowship status of the Association for Educational Assessment Europe,

the highest level of professional recognition for expertise in and contributions to the assessment profession.

Dr. Jill Willis. Dr. Jill Willis is a professor of education at Queensland University of Technology, Brisbane, Australia.

Her research investigates how reflexive. Excuse me.

Reflexivity. I have a hard time with that word can lead to a greater agency in the context of school structures like classroom assessment,

learning spaces and evaluation processes. She currently leads research on accessibility and assessment and student evaluations of vertical schools,

and is a member of the center for Inclusive Education. Jill has a strong track record in collaborating in international and multi-disciplinary teams.

She is proud to be part of the international research team, led by Professor Christopher DeLuca,

to propose four assessment capacities for assessment education in the 2023

book Learning to Assess: Cultivating Assessment Capacity in Teacher Education.

Daniel Taylor Griffiths. Daniel Taylor Griffiths is a PhD candidate, sessional academic and research Assistant at the University of Queensland,

and is currently completing a placement with ACER's School for School and System Improvement.

Having worked in various academic, student support and policy roles at several Australian universities,

he is driven by the need to mobilize educational psychology principles and evidence to support effective educational policy and practice.

His primary interest is in developing student, self and co-egulatory capacities to facilitate the successful transition to higher education.

Daniel's, PhD focuses on self- and co-regulatory feedback mechanisms that facilitate student motivation and engagement

with an aim to promote student wellbeing engagement through self-reflective feedback practices.

Well,

I think we are glad to be here among good friends and also a team that's going to be able to tackle some of the most thorny questions ahead of us.

Let's remember that all of these questions are guiding questions, and they're questions that are going to evolve over time.

So we hope to have our guest panel back maybe in a year from now.

And we'll see what our answers look like then. But today we'll take a swipe at three critical questions.

First, what does feedback look like in the age of AI?

In other words, broadly defined, what do we mean by feedback and what might it look like and feel like in the era that we're currently living in?

Secondly, how will AI-assisted resources, tools and technologies deepen?

And that's the key idea-- deepen-- feedback processes, cycles and routines.

What can we expect? What do we hope for? What we'd like to see happen?

And finally, will AI-assistive technologies better support the quality of the directionality and configurations and modalities of feedback itself?

So, without too much further ado, let's tackle that first question.

What does feedback look like in the age of AI?

And we're going to go by first names at this point. So Jill Fabienne, Daniel, go ahead and tackle this one.

We've got about 15 minutes to unpack this question. Good luck everybody.

Wonderful I'm happy to start us off.

Um, so I think in responding to this question, it is worth distinguishing, um, between what it could look like versus what it actually looks like.

And Daniel and I are currently synthesizing findings from a review on technology enabled feedback.

And our findings show that the extent to which the potential of tech-enabled feedback, um, is not yet being realized in practice.

In fact, we find that much of the research is still considering feedback as a highly prescriptive endeavor where students are afforded limited agency.

In our review, we are drawing up on an existing framework, um, that distinguishes four categories of student role.

And this framework ranges from no student role to extensive student role.

Now, many of the studies, um, that we've reviewed were categorized in that second category,

which sees students as processing and acting on feedback, but doing nothing beyond that.

Um, and whilst this research is still ongoing,

our preliminary findings suggest that studies that included a focus on AI adopted a more contemporary perspective to feedback and, um,

the role that students are playing that including, for example, features of adaptivity um and student agency in seeking feedback,

as well as shaping the nature of feedback and how they might or might not engage with it.

So I would say that although there's plenty of discussion about the potential for AI to transform feedback practices at scale,

our research shows that what is currently in the literature is not yet reflective of contemporary feedback, research, and technology potential.

Um, I, I agree with you, Fabienne, that there's a lot of discussion.

And I think in many ways practitioners are leading the field in experimenting and researching.

Um, my background with feedback was initially as a teacher before I moved into teacher education.

And then I can remember the getting cranky when I read Black and William's initial review going, you know, we do that as teachers all the time.

It doesn't necessarily mean everything is great all of the time.

So I wanted to I went and did my PhD to try and work out what else was going on, and I think for a long time,

feedback has been seen as a gift from the expert teacher to the student, and students have had to wait for the teacher to give it.

Then they've had to receive it and convert it. And the power was in the hands of the teacher.

And I think, um, my orientation towards assessment and to feedback is from a socio cultural perspective where it's not,

uh, you know, a feedback is not just one direction,

even where the teacher thinks it is, the student is taking on board a lot of information from the way that the teacher interacts with them.

And it is the offhand comments, the, um, what mood they're in that day.

So I think for me, seeing the way that AI is being taken up in schools and in my own classes in teacher education,

I think feedback has moved into the wild. And it's this really nice shift of power where students are not waiting for the teacher to get feedback.

They are seeking out feedback for themselves.

And they're they're in control of the timing and the sources and what they do with it in a much more direct way.

And there's the promise of faster feedback.

And I did a study with a colleague.

I've been working for ten years with, uh, colleague who's in information science, and we've been doing early experimenting,

and we did this promise of faster feedback loops, but it had a whole lot of social and cultural effects that surprised me.

Um, and I guess we'll talk about that in later questions.

Um, but I think for me, I, I agree.

So there's more questions than answers still at the moment.

So some of the questions I'm thinking is having feedback in the wild where.

Like, you know, I just did some marking last week and I had somebody say, oh, I got feedback from

I did this with Copilot, I did this, they let me know of all the different tools I'd used, and I went, that's great.

And I'm thinking, is this going to lead to more students giving more?

Divergent responses? Or is the machine-driven, AI-feedback going to narrow down the responses?

Because it's just dealing with, um, the high probability answers.

And I'm wondering, is there going to be a wider gap between those who've got Digital Capital, Curiosity Capital, and those who haven't?

Because at the moment it's the adventurers and the question askers who are kind of getting in there and experimenting.

But I'm also seeing, um, students in schools and universities who have disabilities.

Who are getting in there and making use of the tools. And I'm going, oh, could it close gaps?

Um, one of my students showed me goblin tools, which, you know, has all these very cool resources for people with ADHD like he can put in.

These are the ingredients that I've got in the fridge. What could I make for dinner? To...

I've got this complex task. Can you break it down into steps?

And they were. Yeah. So in some ways it's turning the table.

So people with common disabilities are getting in there.

Um. In Australia, we've got a ban on mobile phones in schools, and I'm going,

this might in like students use their phones in one of the research projects I'm doing.

They use their phones to buy their lunch, their workout, their timetable, see if there's a room change.

Now that they can't have them. They're having to go back to their devices.

And I'm going to see even that shift in what device is allowed in schools.

I think it's going to shift, you know, what gets used.

And then, um, the final wondering that I've got is with, um,

edgy businesses and tech companies are going to be driving the agenda more than educators.

And there hasn't been a long history of collaboration in design around this.

So yeah, I'm wondering how that's going to shape. So I've got lots of questions, more than answers at this stage.

Daniel, I'm going to pass the talking baton over to you and you can answer all my questions for me.

I had many of the same questions, Jill, and coming into this...

You know, I was a little bit overwhelmed by the question for multiple reasons.

One is the speed at which this is this is progressing.

The technology is obviously progressing at a really rapid pace,

as is the proliferation of all of these tools, whether they're paid tools or free tools.

And I think your points about, uh, who's driving this is a really

important one.

The the idea that, you know, while our research is, is suggesting that what is and what can be,

um, what might be, um, uh, might not yet be aligned, uh.

The potential driver of what can be.

Tends to be in that private sector where the where the products and tools are being produced are not necessarily researched.

And so as researchers and as teachers, we're we're always on the back foot.

We're always trying to catch up with whatever's going on out in the, in this, in this space.

So I think we're always going to have this, um, unless we can get some real collaboration happening.

I think we're always going to have this. I'm always going to have this sense of unease about what?

Where this is taking us rather than where, uh, where we might be able to take it.

And I think that's to to use a meta level, I think that's where feedback is heading.

Is, is, uh, does AI uh, drive the feedback that we're able to,

to give our students or are we able to, to drive the types of feedback that they are receiving?

So in trying to break down this question, I'm thinking about all of the complexities that that we understand about feedback.

And our understanding is, uh, take AI out of it.

Our understanding of feedback is developing rapidly as well, you know, so, you know, as,

as recently as Hattie and Timperley and all of the work, this happened since our understanding of what feedback looks like, um, is,

is rapidly developing the idea that that teachers held on to feedback, uh, just say it's out in the wild and in the back of my head I've got wild,

wild West because it does seem now that it's it's almost democratized or it's it's out in the wild and almost out of control.

But I think that changes what we see as feedback in the way we we view feedback in general, um, might end up changing.

And I think there are some social and, um, and psychological implications for that.

I know the, uh, the stress of being judged in an assessment if we only have that one feedback slack or I submit a product,

I get feedback back and that's, you know, the feedback cycle, um, there's a lot of weight put on that.

And I think if we're given many more iterations, um, and timely feedback, I think that might depressurize,

uh, the, the silence of that one piece of feedback that we're getting back from teachers.

And I think potentially we have this opportunity for a much more dialog, much more community.

It can be a communicative process, um, between teacher and student, between student and student, between student and machine.

And I think it's really important, again,

as part of unpacking this is to start to think about who's getting the feedback, who's giving the feedback, and where.

This sits within a broader network of co-regulation.

So students aren't necessarily just getting it from the teachers. They're going out, uh, grabbing it from, from AI and from their peers as well.

And some of the primary research that, that I'm involved in is, is looking at what gaps,

what gaps in the current educational system are being filled by AI, so where students are actually going out

and looking for feedback is where they're not getting it from their instructors or from their textbook.

And so the students are really driving the kinds of feedback that they're getting in a lot of ways.

And I think that's really exciting. If they have the tools and the abilities to those that have the capabilities that Jill's been talking about,

the the digital capabilities, feedback, literacy, even financial capacities is an important thing here.

And I think, again, Jill's idea of, you know, does this bridge gaps or does it actually widen some I think is, um, as the market,

uh, as the market develops, uh, for, for these technologies, I think we're going to see, um, both of those things happening.

I think some, some gaps will be bridged. And I think unfortunately, others might be widened.

There's some initial thoughts, but but overall I think

The broad question is an important one, but I think when we start to get into the details about what kind of feedback we're talking about,

I think that's where we start to get into some really exciting opportunities.

I think you make some really interesting points here, Daniel,

that I think when we reflect on the answer to this question in a primary versus secondary versus tertiary education context,

I think that concept of what you'll describe,

the feedback in the world and student driving it, is particularly pertinent in the higher education context,

where immediacy of feedback has always been an issue due to the choose scale education enterprise.

So I think that's where we will see some of those really innovative examples of students seeking feedback,

having agency and then deciding what to do with that, drawing up on multiple sources.

And I think that has really strong potential for deep learning.

Whereas some of the other applications that Daniel and I have reviewed as part of our ongoing research,

it still sees feedback as something that can potentially actually create more shallow learning experience,

because if it's just the student putting in a response, getting some feedback and then adjusting,

that's a very narrow conception of what feedback could look like.

Yeah. I just want to say that a good guiding question generates this much.

Profoundly important questions as it does answers. And so we're just grateful for you taking a swipe at this.

We'll make one note before we transition to the next question, which is in the age of AI presume, some kind of a dawning, a dawning of an age.

Right. It also might situate us in understanding how ages are on multiple levels.

There are ages of questions around the digital divide itself that have been plaguing the United States for now, almost 30 years.

Who has access? What does access cost?

How do institutions distribute access? Which K-12 schools are going to be able to pay the licensing fees for the

deeper forms of so-called feedback that are less corrective and more constructive?

Which ones aren't? How would we even understand that inside of an epoch, a period that's evolving?

So I think we have to keep our eyes on two things. One is the time, and it's rolling out how we're seeing these things come about.

But also going back to some of the things you all really pointed to,

which is that we have about 25 to 30 years of solid research on feedback, but that was all pre-AI, in some ways that was pre-pandemic as well.

So I'm guessing this question is going to come back, particularly as we look forward into what research will say about a previous era,

an era that almost looks historic, like a dinosaur era, frankly,

because you start to wonder what kinds of feedback protocols will become extinct, which kind will no longer exist for us in the way that if,

for example, in Jill's class or my class, we would have thought, well, that's how you do feedback.

Um, so we're learning as we go, and let's go to the next question to keep drilling down or drilling up , however we want to go.

All right. So this next question is how will I assisted.

Resources, tools and technologies deepen feedback processes, cycles and routines.

I love the optimism of this question. It's very good.

I think and. Yeah.

I think as Fabienne was saying, so much of the, um, machine-driven or AI-driven feedback has been at that surface level and micro steps.

And so thinking about how it deepens the processes is a really fun one to contemplate.

I think it absolutely can deepen student opportunities for agency because when it's part of the formative process assessment for learning process,

it gives an opportunity for students to be taught to be reflexive.

And by reflexive I mean looking back, looking forward, looking back, looking forward.

It's not just reflecting, looking back. It's this ongoing, you know, movement.

And also to learn how to be critical because I think students are going to need to be able to ask and ask and answer questions like, is this true?

Is this good? What's better or do I agree?

And so routines are going to be really helpful in setting students up, whether they're in primary, secondary or tertiary,

because I think those routines become epistemic scripts that stay with students through their lifetime.

And these are really good big questions for any human to ask, you know, is it true?

Is it good? Is it better? What do I agree with?

What can I do in response?

I think where AI-assisted tools become a little more concerning for me is in the summative process because they, you know,

I've got concerns about the consequential equity, um,

because that's where I can easily misrecognize atypical patterns and where non-normative stereotypes

get baked into the AI process.

and it's also, I think, where, very quickly, if we've got teachers who are time poor,

relying on AI to give the feedback and move the student forward to the next bit of learning,

as you were mentioning, Dan, then there's that emotional cost.

You kind of can quickly feel alienated from school, alienated from the feedback.

you start to mistrust not only the whatever the AI is providing you, but mistrust your teacher, mistrust schools.

And that breakdown of public trust is a really, I think, something we need to be aware of.

And I think schools play a huge role in building, you know, community co-regulation trust.

And I think I'm just reflecting back to what seems like an old paper now

And now I now have a picture of myself as a Jurassic researcher.

Thank you. There was...

Kalantzis and Cope (2016) wrote this really lovely article called "Big Data Comes to School" and it's, you know, old now.

But they went...In an ideal world where we've got this machine-generated feedback,

we actually may not need summative tests anymore because we'll have these micro feedback

loops that will be much more valid than any kind of bubble test or

summative test,

or one that's sort of remote from the learning. And I'm thinking that's a that's the optimists view, I think.

Yeah. I think. Yeah, I've got one more idea, but I feel like I've just.

said a lot then, and I'll want to hear what other people say.

And I might jump in about the emotion story, because I think that one is really interesting to me.

But being you, you've been doing this for ages thinking about, you know, machine and AI feedback in the loop.

Yeah. Thank you. Um, I think I like you.

I love the optimism in this question,

and I'm just hoping that we can finally move beyond automated feedback that sticks and crosses towards an approach that's fundamentally different,

um, and way more dialogic and gives students agency.

Um, I think what we're seeing a lot of already is more personalized feedback,

including on open ended responses such as written responses and the advances in,

um, natural language processing have really contributed to that field enormously.

Um, we're also seeing to more limited extent, um, on demand feedback where students say, hey,

I need help, and then they get feedback as well as, um, some movement in terms of the modality.

So not just written feedback and picks and crosses, but it could be video, could be, uh,

an image, it could be all sorts of commonalities, including what the students input.

And another thing I think is really exciting in this space is the automatic collection of a wider range of data.

And that can include those affective components,

because we know just how important the affective components are when students, um, process and act on feedback or not.

So I think in theory we're seeing AI-enabled feedback can be instant and personalized,

but I also feel that the lessons from the broader feedback literature have taught us that for feedback to have an impact on learning,

it needs to focus on improving the learner and not just improving their work.

So I think this can be enabled by AI tools that ask questions to probe thinking rather than provide the answer.

And I think that is really critical if we link back to our focus on deep learning.

Daniel, do have anything to add? Yeah. Just just to just to add to to reinforce what what you both said is, is, um,

this idea of, of speaking on behalf of the idealists, maybe, and acknowledging that,

that the technology is one thing, but then the change management, the training of teachers,

the training of students to be able to use these tools, these are just tools.

They serve a purpose. We also need to be able to train people to to use them.

But speaking on behalf of the idealists, you know, this idea that the summative assessment was you.

We asked you to go through a set of learning processes. You produce a product that gives us an indication of what process is that you've been through.

but at some point in time, I, as a market, need to interpret the set of processes that you've been through by the by the final product.

I think AI gives us an opportunity to rethink some of those assessment products,

and to really tap into processes that students go through in a much more direct way.

Sal Khan talks about submitting AI transcripts as,

as evidence of the processes that people have been through in terms of
co-regulating towards, towards a product.

And we've, we've adopted something similar in one of my masters
courses.

so I think is from an idealistic point of view,

I think when we start to think about the modifications or the re
definitions of our assessment, there are opportunities for...

For more direct, uh, acknowledgment of the processes that people have
been through.

And I think that can only help students with their deep learning if
we're if we're actually giving feedback on the

the metacognition and the self-regulatory, self-regulatory processes,
I think that can only be a good thing.

But again, it takes, it's going to take some training.

The other thing I wanted to, to pick up on, was Jill was talking about
trust

and some of the reading that we've been doing, you know, where do
students situate AI in this relationship, some

some of the writing that I've been reading suggests that in the
absence of confidence, in the absence of,

agency, students aren't willing to put their hand up and talk to
teachers, so they will go to the computer.

and I think that's a great thing that we're giving access to students
who may not, may not feel comfortable.

I have in the back of my head

a sociological and a slightly moral query about what we're doing in
terms of

the relationship that students have with their teachers and with each
other.

if we're...my concern is that this becomes a crutch,

or for teachers who might be time poor for students who might otherwise struggle with interactions,

there's there's some incidental learning that sits outside of

the direct, the direct intention of AI here that I think

we're so far away from being able to start to unpack because we're still in the early phases of, of even understanding what we've got yet.

But... the last thing I'll say and I'm conscious of being the PhD student here.

I don't want to take up the time of the experts, but the last thing I'll say is

whether or not it deepens feedback processes and cycles, it will shorten and and increase the number of feedback processes and cycles.

And so if I've got one opportunity to give feedback, I might be able to give three superficial ideas back to my student.

If I can do that ten times, then hopefully that spiral, that feedback cycle gets deeper and deeper on each on each iteration.

So I think that's mechanically a way that we can get to deeper feedback just through through whatever iterations.

And, Dan, can I pick up on that multiple iterations because I think

reflecting on a research project that I did where the teacher saw that happen just through using discussion boards,

and then another project that we ran at university was I was involved in a fast a feedback process where we were using early

language, natural language processing and students.

These were large scale classes. Students were reflecting on the learning that week.

And as I was getting a summary and then I could respond to that learning by then, the design for next week.

So it was quite rapid. And the students got great grades.

They were really happy.

But the emotional cost on me as a teacher was huge, because the way

that the learning cycle was set up, I was getting all of their
anxiety.

You know, when you're heading into the learning, you've got people
going, oh, I don't know what to do.

I can't do this. And it was like the entire 150 students worth of
anxiety was weighing on me really heavily each week,

and I had to think, no, as a teacher, I've designed this.

I know they're going to come out of this learning, but I just went,
oh, that was a lot.

So that fast feedback cycle, I think adds an extra toll on teachers,

especially where we do want to preserve that teacher student
relationship and say, you know, I've got this.

And I could turn around and say, you know, a couple of you were really
worried about this.

Can I tell you it's okay? Because next week we're going to be focusing
just on that.

And this week I've done this to help you get there. But I've been it
was exhausting.

So I think that's one of the hidden tolls. You know what?

What if you could have fed that into the AI and the AI could have made
the comments and then just given you a report?

This is what the students are feeling, you know,

so you could... you wouldn't have had to take on that feeling all
the... you could have outsourced it, you know what I mean?

But the it's my emotions. Yeah. This, you know, would have been
something what it would have been at a distance.

I don't know, I think the distance is helpful,

but it surprised me how personally I was taking the uncertainty that I
wouldn't have had access to without that fast feedback loop.

And yeah, I think that emotional cost was something that I learned and
went, "Right."

Got to pay attention to that.

I am...just think this is again why we have to talk as both practitioners and researchers and putting on different hats to make sense of this work.

It's funny how the question does presume a certain amount of optimism I'm hearing. And of course, it also has a presumption.

The presumption is that it has any way to regulate and co-regulate the kinds of emotions that we may have as the human agents,

not only our students, but ourselves as guides on the side or coaches of learning.

I think one of the things that's fascinating about this question,

if we connect it back to the talk that we were fortunate to be able to give with you all,

Jill, this summer at the university is you know, where is the where are the learning goals in these discussions?

Where are the rich tasks? How do we describe a task?

How do we understand the task ant its relationship to the inference we'd like to draw in terms of: are you ready to do the following?

And have you demonstrated these kinds of skills and competencies?

And even in addition to the tasks not being well defined, I don't even know what the so called on the ground visible learning criteria are.

For example, in the old days when we gave feedback,

we imagined that we actually tied it to something like a rubric or something like a progress guide or scoring guide.

We tried to make visible to the students where they were, and a progression and or an unfolding of a learning experience.

And we have so much evidence and so many subject matter areas in primary and secondary schools about how teachers have used these tools.

So I find it interesting that when we talk about AI, a lot of times, for me, what's behind it is.

What are the learning goals? What are the success criteria?

And more importantly, perhaps even from a sociocultural point of view,

how do we share those in a way that's visible,

traceable, and seeable to all the kids who are in the learning community itself?

So, let's just say this. Some of these questions are in a sense, assuming not only goodwill,

but they're also assuming that we don't have to answer deeper questions about what we imagine

to be educative goals for a particular curriculum in a particular sequence of curriculum,

in a particular classroom that is developmentally sensitive to that grade level.

I mean, we just sort of imagine that doesn't exist anymore.

And I think that is not exactly how most of us were raised to think about assessment, for example,

for any kind of learning, whether it was assessment of learning or assessment for learning.

So I just think it opens more questions and answers. And maybe the next time we get back,

we'll talk about how does AI convince us and its resource provisions that it has any kind of

learning criteria that we ourselves would offer as feedback givers or feedback moderators?

I's an open question, right? Yeah, I think that's a really interesting point.

And I think it's interesting that you say that that was missing because for me, that's still front of mind.

And I think that becomes increasingly critical when you think of the student playing an agentic role in seeking feedback.

They would have to look at the task really closely. They would need to know what they're aiming towards.

They would need to have some sense of the criteria, and they might get the AI chatbot to help them deepen their understanding of that.

But without that, it can go completely off in the wrong direction.

So I think that's absolutely vital to keep that front of mind when we consider the power behind feedback.

Let's go to the next question. I think this one's mine.

Will AI-assistive technologies better support the quality of directionality?

what we often call in our own work. Directionality. But I think we've just heard it can also be called agency.

configurations of feedback, whether it is a small group, a one on one, or a whole class, and modalities of feedback.

whether we think of it as verbal, nonverbal, we think it is haptic.

In other words, you know, all the things that are in the soup to make the wonderful ingredients to cook the right sort of experience.

AI going to help us better do that? And, we're really looking forward to hearing from you about this because we don't even

I think, Carrie, know yet ourselves how to answer this question. Jill, Do you want to start us off?

Mhm. Yeah I think um. That.

Just to clarify by agency, what I'm thinking of is that sense of being a person who matters

who can make choices about things that matter like that, that powerful.

Yeah. Students being powerful learners.

And when I think about the word I picked up on in your question was "quality," because I think feedback is ultimately a dialog about quality.

and quality is like truth and beauty and love.

You know it when you see it, but it's really hard to put it into words.

I can remember sitting in a seminar with Roy Sadler, and this would have been mid early, mid 90s.

It would have been. And he was talking about quality.

And in my mind it lives as a story called Sadler's Grandma's Roller Coaster.

So what he was saying was he can tell his grandmother what it feels like to ride a roller coaster by describing it, but really,

the only way to get that feeling of being on a roller coaster is when you're sitting in the roller coaster and you can feel your stomach just drop,

and you can enjoy the scream as you go around the corners.

And so I think quality is something that students will pick up only as they're engaged.

With the feedback process. So I think.

AI supporting

the quality of feedback is helping students experience feedback in many different ways, in different configurations, in different modalities.

With, as Fabienne was saying, with very clear goals of "quality of what?"

you need to have the sense that these are the features that experts really value in quality.

What does that look like? Was it feel like to produce this?

Is this close? How do I get it closer? How do I experiment with it?

So I think. Yes, AI will support that because it means that there's more opportunity for interaction and dialog.

As long as we don't just say

You know, like the old learning machine. Go and interact only with this machine that can't give you the dialog.

Think about those being concepts and I think that

directionality, configurations, modality all point to how that can happen.

We've been thinking about feedback capacities that... the epistemic.

It'll be influenced by the powerful knowledge. Now, what's the epistemic discourse community like?

And teachers need to think about the ethics not doing harm, but maybe also empowering those who haven't got power.

And I'm very much interested in that embodied experience.

How could this be healthy and sustaining for people as well as the practical?

How do we get it done? So yeah, I like the fact that you're saying this as a yes or no question.

So my answer is yes. Yeah, I would agree with that, Jill.

But coming back to what was mentioned earlier,

I do think there is a real need for collaboration between edtech developers and researchers as well as practitioners.

and I certainly hope that it would. I have great hopes for the modality, and how that might help us with more dialogic feedback.

Only yesterday something popped up on my Linked feed that got me very excited.

One company has developed a tool where people who are learning to speak a new language can actually virtually interact,

have oral interactions with an agent.

So that's just a massive step up if you compare that to just focusing on written communication, for example, it's often the oral

that's the most challenging part. So I think that has huge potential.

and then just coming back to what was mentioned earlier in reflecting on some of my own interactions with platforms such as ChatGPT.

I think there's real power in having agency in determining what you need when and drawing upon those multiple sources.

But at the same time, there needs to be some sort of quality assurance, especially when learners are more novice.

and I wonder how that is going to play out in terms of equity and

and access and, and also we know that more feedback is not necessarily better.

So how can we make sure that this doesn't become just an extremely

overwhelming process that puts a lid on learning,

but rather generates rich opportunities to genuinely deeper learning in collaboration with others?

Yeah. I think the idea that this is going to take workload off teachers...

I mean, Jill, you just talked about how, this has the potential to add some workload and add some emotional emotional cost as well.

so for me, the key word here when I started to think about this one was, was "better," you know, what's going to change.

And thinking about this from a practitioner's point of view, um, what would I integrate in order to, to, um, to better support, uh, feedback?

and I think the, the SAMR model is really important to think about here--S, A, M, R--

when you're introducing a new technology, you're substituting, the technology for the something that already exists, you're augmenting

So you're, you're substituting but you're adding functionality. You're modifying where you're redefining the task,

sorry, you're modifying where you're redesigning the task.

And then redefinition is completely like, throw it out. Throw out the baby and the bathwater.

And, um, and, uh, that's a terrible analogy. Sorry about that.

But, um, but, uh, but completely redefine it.

And I think...In broad conversations like this, we tend to throw all of these things together.

I think that there are substitutions that will free up.

Uh, teacher time. I think that there are augmentations that will make things incrementally better.

But I'm really interested in, in those modifications, in those re-definitions that help us to rethink feedback.

I think the way we think about feedback potentially as this, you need directional, task-based, corrective

communication, is a function of the educational environment that we've
lived in up until now.

And I think it gives us opportunities to really redefine the way we
think about feedback as as a much more

dialogic, dynamic, network of, of communication and co-regulation and
I think...so my answer is yes,

but and I think the the important thing here is that ideally that
ideal is going to take a lot of upfront investment

both from the people who are designing this and the people who are
picking this up and implementing it.

And I think that's going to be the big challenge is, is to to make
sure that we've got solid evidence to support the innovations that

are happening and solid PD to to help teachers and other and other
educators,

to be able to implement these mindfully, with purpose, and not just
bring on the next fad, because it's the shiny new thing.

So. Yes, but. Carrie did you want to jump in?

Yeah. I'm smiling because as I've been listening, I think to a person,
I've been hearing

this hopefulness around increasing move toward the dialogic-ness of
feedback with students

and differing amounts speaking to which that's going to be AI-
assisted, and I don't know how explicit

each of you has been saying there's going to be transference to the
human realm of that dialogic-ness

But it does strike me of there's a hopeful ness of that, that
something in this shift that's happening, that there's going to be a
change.

...the move toward the dialogic-ness of feedback in our understanding
of it, there's an increase of students are going to experience more of
it.

And it strikes me as as hopeful, because I don't know if I'm more
pessimistic or more cynical.

I don't know if it necessarily has to go that way.

There's a part of me like there's an inner part of me that marvels at how optimistic, I'm hearing you to be today, and I'm celebrating that.

So that's what I want to reflect back is that this is good because an AI is just an AI and how we use them...

...maybe it is the human condition that we do crave dialog as human beings.

And we'll, we will bring it to the human realm.

You know, we'll get it in the machines because that's what we want and somehow bring it more back into the classroom than it currently is.

Daniel was saying earlier, you know, he sees like students are seeking it out because it's unfortunately not already there.

And I hope I'm not putting too rough a summarization on what you were saying, Daniel.

And, um, so. Yeah.

Yeah, that's what I was thinking about, Brent. That was my reflection.

And if anyone wanted to...the other thing that I heard was a bit of a semi- prediction in some things

and if anyone wanted to go be bold and make a prediction, this is a cool time and place to make one.

I might just respond to that first point. Carrie, and just elaborate a little bit on what we mean by feedback as dialogic.

So that feedback review that I talked about, that four-level framework of student role that we're drawing upon in our current work.

It says the most advanced category of student role is where they have a substantial role.

And we characterized that by students exercising agency to frame assessment and feedback practices to self-regulate.

Students are also positioned as active partners. And you can probably imagine what that looks like in a human setting,

but you could similarly envision what that might look like in a setting where the feedback is provided by technology.

And we see students that's really proactively seeking as well as

receiving and providing feedback to progress their own,

as well as, others' learning, and, research from this perspective really sees, the critical role of students as

actively engaging with feedback for it to have any impact on their learning.

and such research also recognizes that we can't predict feedback effects because how students respond to feedback,

depending on their individual characteristics, the social/emotional conditions,

as well as contextual variables, they really impact on, that individual variability.

And therefore, we think that feedback effects cannot be predicted.

But in saying that, I think what we're seeing in a lot of the research that we've looked at lately is that that still seems to be the ultimate goal.

If we only can find out how we can adapt this feedback to what what students as a general group might need,

or if we can take account of their individual characteristics, then we can target it.

And I think there will be more research over the next decade or so that will focus on that adaptive nature,

hopefully adapting the focus of adaptive features, that it doesn't just focus on the student output as a response,

but in saying that, I do think that it's timely for us to look more broadly at

the factors that really influence that individual variability and perhaps move away from an obsession of trying to predict its effectiveness.

I just want to pick up on something that Jill said earlier and thank you for that, Fabienne.

And I think, I think defining dialogic in a community of practice, both research- and practitioner-driven definitions,

will really be a bit of the gold standard for whether we can agree that we've gotten to a better place,

because if we've gotten to more dialogic then we promised back to Royce Sadler's days

then we certainly can see this technology as having liberated us to do things we didn't imagine.

But I also would put a caution from the part of me that says, you know, we spent a lot of time for the last, maybe 50 years

depends on where you market, on developing what we would call standardized assessments, standardized tests,

standardized procedures for comparing both groups and individuals against some notion of a metric.

If I think right now in Australia, not only are we thinking about localized assessment, but we do have PISA as well.

And if we're in the US, we might be thinking not only about our local district level assessments to look at,

for example, science or mathematics or English language arts. But we'd also have to take into account our NAEP results.

There is a bit of an interesting shift going on, right where we're kind of almost micro local,

and really thinking about the tech as a way to drive more information into the classroom.

That's going to be useful to make differences in student outcomes.

But there's another piece of this puzzle was it's much higher than that.

And that is are we looking at the death of standardized testing as we know it?

Are we looking at PISA going away? the National Assessment of Education Progress going away?

In our own state, certain kinds of statewide assessment tools, like the Smarter Balanced, design tools, are they just going to go away?

I think one thing that I'm still really curious about is we might have this discourse here together

as researchers and people support school leaders and school teachers and students in the schools.

But maybe there's still going to be this other space where people say, oh, that's great, keep doing it.

But we're still going to need a standardized metric to compare individuals and groups across larger populations.

I'm throwing this at the last, a sort of a fourth hiding question.

You know, what is going to happen? Are we going to sunset standardized, large-scale assessments and those batteries,

or are we going to simply just slowly build the revolution from the ground up?

And we won't even need to worry about that question, because all of this will take care of the problem.

I didn't pose for you to have an answer today, but I've been thinking a lot about it the last few weeks.

I think it's a really good question

because I was thinking how important the teacher is in making this possible in terms of setting up the

conditions for students to make choices for encouraging and doing the work that Dan was describing,

going, let me iterate or let me be revolutionary in the task design.

And I think the freedom to do that in Australia is often a little bit greater than it can be in many U.S. contexts,

where teachers may not have as much freedom in doing the design of assessment

and there is a bigger pressure coming down from those standardized tests

and the expectations and the uses that those standardized test results are put to,

whether it's individual student progression or whether it's teacher performance or whole school performance and,

you know, funding, there's a big slide back.

I don't think standardized testing is going away at the same rate that AI tools are being developed for individuals.

The big data algorithms are making it more convenient and apparently easier to make big policy decisions.

I think the challenge will be maintaining the teachers creative, intellectual,

emotional leadership capacity to do what is important for the young people that they work with in a climate where that freedom is,

I think, going to be put under even greater pressure.

So I just want to give a shout out to any teachers who are listening and any teacher educators who are there.

I actually think as we we play a really important role in maintaining the possibilities for humans

in our community and to setting up expectations for civic and good dialog and good learning.

And just...I don't want to say maintain the rage, but, like, just maintain your confidence that this is it's a pivotal...

pivotal interpretation point because, Brent, I don't think the conditions are going to get better.

I do think they'll get slightly worse, but I am optimistic because teachers are still in the middle.

I think that's a great place to end today's talk.

We are so grateful, Jill, and, Daniel, and, Fabienne, for your incredible insights into some very tough questions.

And we just want to say on behalf of our center for Innovation in Applied Education Policy.

Thank you. And we look forward to meeting again to discuss similar questions in the future.

Great to have the connection between Australia and the US, there's so much for the US to learn and look to, and Australia and all the innovation,

interesting things that you're developing in Queensland in particular, but also across your great, great country.

Thank you so much. Thank you for having us.