

Speaking of Research

Series 2 - Nick Huxley

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SPEAKERS

Nick Huxley, Catherine McDonald

Catherine McDonald 00:04

Hello and welcome to Speaking of Research a podcast from the South Coast Doctoral Training Partnership. I'm Catherine McDonald, and in the second series of our podcast, we're focusing on research that addresses global challenges. We'll be in conversation with doctoral researchers about their research, which global challenges they hope to inform, and how they hope their work will make a difference. In this episode, I'm joined by Nick Huxley from the University of Brighton, whose research is addressing the challenge of integrating AI tools into the classroom. Nick, this sounds really interesting, tell me more about it.

Nick Huxley 00:44

Hi, thanks for having me. Yes, so I'm first year researching, so my plan is to look at AI tutor bots. So it all comes from the kind of global challenge we're having at the moment with the rise of AI, where AI is being seen as like a utopia and solution to the personalised learning. So, it kind of ties in with the quality development goal of quality of education from the UN. This is perfect timing, actually, because yesterday a paper came out from UNESCO about AI in the future of education. So, I got very excited about that, that ties in nicely what I'm doing. So, I'm looking at tutor bots, or large language model tutors, and their impact in primary education, and specifically in maths, because there is a lack of evidence for their use at the primary school level, there's lots of kind of evidence, or they've been used, rather, in higher education, further education. So, on looking at their use and their impact, the impact on learning and their impact on engagement. So, with engagement, it's looking at how would such tutor bots affect the child, cognitively, their behaviour or emotionally? And it's all framed around the digital

divide as well. So equity in education, again which is tied in with one of the sustainable development goals that's to reduce inequalities number 10. But the digital divide and equity in education, so will these tutor bots, will they erode that? Will they strengthen that? Certainly, the language that you hear from ed-tech companies and that area are things like tutor bots they will certainly strengthen equity, because everybody can have advice, and it can offer, you know, personalised learning. But one of my questions is, certainly, you know, will these tutor bots become essentially a private tutor, if you like, for those who can afford it or access it. Because on the UNESCO paper that came out yesterday, they have an amazing statement in there, in their kind of executive summary, where they say a third of humanity is currently offline. So that's quite a big, impactful statement, which the whole of my research kind of sits, sits in front of or behind if you like.

Catherine McDonald 03:17

So there is so much to unpack there, Nick, but I have to ask, what actually is a tutor bot? Can you describe one for me? What is it?

Nick Huxley 03:25

Yeah, that's a good question. That's a good point, because the people I talk to when I've been explaining this on our kind of induction on PhDs, I've had to go down that path as well. People have used ChatGPT, or they might have used Google Gemini, those kind of AI large language models that millions of people over the world use. So just imagine that in the classroom. So, imagine a child going in each morning have their morning workout. They have a device in front of them, whatever that is, iPad, laptop, and on their there's essentially a program, if you like, that will appear to the child as if it's like a personal tutor. So, it'd be like a little window, and it could challenge them, it could take them on a journey of their learning, if you like. It could prompt them; the child can prompt the Chatbot questions. And this is my kind of stone in the shoe, if you like, because my background is actually a classroom teacher, and while I was a classroom teacher for 10 years, I was also the computing lead in primary school. So, I see a lot of these kind of ed-tech fairs and conferences where they pitch that you have 30 children in your class, it's impossible to give every child a personalised learning or personalised journey. So, with the tutor bots, then a teacher could then set the work, and then a child essentially could work with that program at their own pace.

Catherine McDonald 04:55

So does the teacher have control over the tutor bot or is that totally dependent on the child. Have they got free reign? T

Catherine McDonald 05:02

That depends on the tutor bot to be honest, I think yes, exactly. So, this is, this is my big thing as well, exactly. So where is the teacher agency in this? So that's one of my pedagogical

changes. How are these? How is this, there's quite a big shift in, you know, how teachers could potentially operate, if you like. So what evidence is there on the student thinking? You know, what is the teacher control? How much control does a teacher have? So yes, there are lots of analytics that a teacher can look at. They can look at what the child's done. Think of it as like a Duolingo, but more so because it's based on the curriculum and where you want the child to go. So in theory, a teacher could look at the impact it's had, if it's just doing like an assessment or a score test, if you like. But I'm interested in the questions of, well, how is the child interacting with it? What the key phrase is, cognitive offload. So is that being shifted, you know, from a teacher asking a child directly a question. You have that interaction, you can push the child, you can scaffold their learning. You can look at high order thinking. So, you know the dialogic learning, if you like. So, we're like co-creating that learning with the child, but when you have this tutor bot as an extra partner, how is that linking going between the teacher, the tutor bot and the child, that's really where I've gone down last couple of weeks for sure.

Catherine McDonald 06:24

Absolutely. Yeah, it's so interesting, and so many questions. So, what have you found out so far?

Nick Huxley 06:31

It's very early days, and the field is so wide, and it's all fascinating, and I'm finding myself having to rein myself in. But one thing I am finding interesting is I'm not asking if AI is good or bad, really rather, how are we measuring who's doing the thinking. That is an area I hadn't looked at when I did my proposal for my PhD, but now looking at the plan more, the way I'm going down is there's lots of conversations about, okay, these might be good, but who's actually doing the thinking in this conversation? So that's one thing. And also, there are conversations about having, like a hybrid system. So, conversations about if these tutor bots are designed collaboratively and they offer conversational learning, but how are they doing that? I've learned essentially that there's lots of commentary on this, but there is very, very, very, very thin amount of evidence over how this is affecting and that it's always been my fear that this will just run away from education, or education will feel like they're forced to pick it up as a new tool, or they get left behind.

Catherine McDonald 07:41

Obviously, we're living in a world, you know, particularly in the UK, we know that, you know, there's a lot of documentation about how overworked teachers already are. So, I guess the key to this is supporting that rather than adding to it.

Nick Huxley 07:55

Yes, that's interesting. So that's the post digital perspective. So that's like another, yes, you're right. So teachers already work in a very platformed age, if you like. So, there's data on

children and all over the place. So this will be another skill set that a teacher has to get to grips with, which, if it is impactful and we all understand how it's working, then yes, but even so, it's the AI literacy will have to not just be for the child, but also teachers will have to because you're completely correct, you will end up with children which will particularly in the 12 to 18 bracket. They're embracing ChatGPT, there's lots of things online about they're doing for the homework and essay writing. But if you've got teachers, you've just for lots of reasons, whatever reason, they're not up to speed on that or understand it, then yes, you could have a an even kind of further gap widening there, aren't you, so yeah.

Catherine McDonald 08:51

Yes, I mean, there is so many layers to this research, even just from this very short conversation, I can tell that, and I hope I get to interview you much, much further down the line as well and hear about how it's going. Nick thank you so much for joining us today and telling us all about that. And thanks to you for listening to this episode of Speaking of Research from the South Coast Doctoral Training Partnership. To find out more please visit southcoastdtp.ac.uk. Don't forget to subscribe wherever you get your podcast, to access earlier and forthcoming episodes. This was a Research Podcast production.