Welcome everybody. And, today we are going to be talking about understanding how AI can empower neurodivergent learners. My name is Anne. I'm a dyslexia specialist in neurodiversity consultant based in London. I've worked in state independent, and international schools as a class teacher and as a SENCO, as well as being an advisor for a local LEA.

18 months ago in a post COVID world, I bit the bullet and set up independently as a consultant, as well as carrying out assessments. I run trainings in schools for teachers and parents and speak at conferences such as the dyslexia show and the TES SEN Show in London. Hi. I'm Vicky Compton. I'm an ed tech consultant, trainer, and coach.

And I was inspired by Annie, and encouraged by fellow Google trainers and AI specialists to take, the work that I was doing as a consultant for my trust into a sailor endeavor. So in September last year, I took the plunge and set up my own business. I continue to work freelance for my trust to conduct AI and Google training in schools and consult on digital strategy and future projects with, organizations. And I also speak at conferences such as this one, that we're doing online as well as the dyslexia show, and also, representing Google at Bet. And I'm really, looking forward to speaking about coaching at ISTE this year in Denver, Colorado.

So you might think, how does a dyslexia specialist and an edtech specialist come together? Well, we first met 23 years ago at Heathrow Airport. We were embarking on a new adventure to teach at the British School of Houston in Texas as key stage 2 class teachers. Now whilst our professional journeys have taken us in very different directions over the years, we saw a really exciting opportunity for us to continue to work together again last year, which we both jumped at. On On a personal level, we both married the men we met in America, your best friends, where Verizon made for each other, and we are now godparents to each other's children.

We both have neurodivergent children, which so this is a little bit of a passion project for us as well. So a snapshot of the workshop, workshop that we've developed for schools, we are presenting to you today. And, really, the aims of that workshop are, what are the challenges for teachers who support neurodivergent students? How can tech tools support and empower neurodivergent learners? What does the world look like for students at the moment following this explosion of generative AI that we saw in late 2022?

And what tools exist to empower neurodivergent learners. So before we can start, let's make sure we understand what neurodiversity is. So it's about understanding that each student has a unique brain. Some brains can be wired slightly differently, which can lead to a different way of thinking and learning. Now neurodiversity celebrates this variation and recognizes that pupils can have a range of strengths and challenges.

It includes ADHD, autism, dyslexia, and many more neuro developmental disorders. Now our job as professionals is to really unleash that potential and enable students to achieve their potential by tailoring their learning and making reasonable adjustments such as allowing extra time or working in a quiet space. Alongside there should be opportunities to celebrate strengths such as being creative and encouraging out of the box thinking. By fostering a more inclusive environment, you can unlock the potential of every student in your classroom. So let's consider what the world looks like for neurodivergent students right now.

So there are positives, such as an increased awareness of technological advancements. There are loads of assistive technologies out there which levels the playing field for students. Example for this might be voice to text, for example. There are stronger support networks. So there are more support groups and online communities for neurodivergent divergent students and their families.

And this could help students feel less isolated and they which includes also finding more resources. Now let's think about the challenges as well. Well, there is real uneven support out there. There is still quite a lot of social stigma attached to being neurodivergent. And still, whilst a lot of work has been done on this, there's still an awful long way to go.

We also have to think about the challenge of standardized testing. This is all this is what we use to measure progress, but this is not always the best way. And it can be very stressful for neurodivergent individuals. Thinking about GCSEs and, as well as an example of this. And obviously, the final one is the is teacher training.

Teachers are still not getting the level of support they need in order to be, equipped to support the children within their classrooms. So, what does the world look like for teachers working with neurodivergent students? Well, it is a challenging time, because what we're having, is we're having consistently shrinking budgets. And whilst the budgets are going down, the level of needs within the classroom is increasing. And this makes it a really different environment, difficult environment for teachers to work in.

And when we think about what we are neurodivergent pupils needs, the most fundamental thing they need is they need the teachers to be equipped with the skills and knowledge on how best to support them in the classroom and have access to the best resources available to be able to do this. So onto the tech part and how we can support teachers, supporting their neurodivergent students. What can they do? Well, by using tech, it allows for learning to be paced. So if you're using something like an LMS, like Google Classroom or Microsoft Teams, the content that you are providing with this to the student, whether that be the lesson, the the PowerPoints, the slides, whatever you're doing, can be revisited at any time that is convenient for that student.

And the structure of the learning unit can also be communicated in advance. The classroom classroom can also be flipped really, really easily so that students can do some of the learning independently, before the lesson, which is really empowering in terms of really knowing what you're going to be experiencing once you get there. And, also, all of that flipped material can be revisited as well, which reduces cognitive load during the face to face sessions themselves. And tech enables teachers to provide multiple means of engagement. So this really taps into the brain's effective network.

So students, got much greater buy in to learning, through the relevance of the learning goals and also provision of the means to achieve them through mastery techniques and through collaborative learning. It also allows teachers to easily provide multiple means of representation. So in this taps the brain's recognition systems. So teachers can utilize various media flexibly. So they could use talk or pictures or film, music multimedia technology, such as text to speech software, to anchor new learning and to develop conceptual understanding from different starting points.

And by enabling open submission, so by saying, okay, you need to show me your learning, but I don't mind how you do that. You choose the method. This really taps the brain's strategic networks and this supports the planning of ways for students to demonstrate new knowledge skills and understanding and in their execution. Again, through a variety of media, perhaps including drama based methods or storyboards or posters, mind maps, or slides. Now these can be an end product themselves or a means to help plan, for the challenges of extended writing.

And by levering leveraging all of these benefits, EdTech can really help neurodivergent students to remove barriers to learning and help them thrive academically whilst also providing a fantastic, learning experience for all the students in your class. So let's think about this brave new world that we're we're embarking upon, and what does this look like for students at the moment? So the world of AI for students is evolving really rapidly, and this offers both exciting possibilities, but also challenges. You know, one of the most recent things that's taken place, is there was a paper that was written by the department for education on a call for evidence for generative AI back in 2023. Now within this, Julian

Keegan, who's current education secretary, said artificial intelligence is here to stay, and it's already changing the way we work and learn.

To take advantage of this transformative technology, it's crucial we get our approach to it right, and I think that is fundamental. We can't put our heads in the sand. We have to embrace it, but also really think carefully about what we're taking and what we might be leaving. So let's think about some of the positives that AI can bring us. So it enables us to have more personalized learning and AI can adapt to students' individual place, their learning style and their strengths.

So this allows for more customized learning experience that caters for each student's learning needs. There is enhanced accessibility. So AI tools like text to speech software and language translation can break down barriers to learning for students. The content is more engaging, so AI can be used to create interactive learning experiences, simulations, and games that can make learning much more fun and engaging. But, of course, we do also have to think about the challenges that this can bring us.

So we have to think about equity and access. Now by that, we mean that not all students are going to have access equal access to AI powered learning tools due to technological gaps and financial limited limitations within different schools. We also have to think about having an overreliance on technology. The most important thing, it's a high quality education is having a human expert teacher in the classroom. And we must remember that AI should not be used as a supplement or replacement.

We also have to think about data privacy. So the use of AI in education raises concerns about student data privacy and security. We think about GDPR needs and the importance of making sure that we adhere to all those policies. We also think to think about teacher training. Now teachers need to be proper need proper training to effectively integrate AI tools into their lessons and assess student learning with AI generated data.

So the future of education is likely to involve a more balanced approach. And that really is what we're hoping for, more balanced approach. AI will continue to develop new tools and resources to personalize learning and support students. However, it is crucial to ensure these tools are used ethically, responsibly and in a way that complements rather than replaces the role of teachers and human connection within the classroom. So onto that balanced approach now.

So onto the apps that we feel can best help to support neurodivergent pupils. Now they can also help adults. So it may be that you're watching this and thinking, oh, I would use this. So as someone with ADHD who also has a daughter with ADHD, since the right rise of AI, I've been keen to find tools to support us. She's a little resistant.

She's actually more skeptical than I am. And I've been, these are some of the key tools that we have used on a daily basis. And, also, I'm gonna talk about how they help us. So first one is Tymo. Now I call it Tymo because it saves me time in terms of procrastination.

If I use this on days that I use this well, I don't procrastinate. On days when I don't use this or I or I plan and then I use it badly, I do procrastinate. So this is a really good one. So I, I have, like, over 50 tabs open when I'm working on my computer. I tidy my house by moving from room to room.

And as my attention is drawn to the next thing that I have to tidy, I pick it up, I go to the next room. I'm distracted by something else. So, when I am feeling overwhelmed with what I've got to do, when I need some order in my life, I use this. So it's an organizer that's got that's been specifically developed with neurodivergent, people in mind. So at about 7:30 these days, I am prompted to set my day up.

And then once I've set my day up, which takes me about 10 minutes we recorded it, so, it does definitely take 10 minutes. Once I've done that and scheduled everything, from, say, 8 o'clock in the

morning until until about 5, 5:30 and beyond, I I then just use the visual planner, which is what you can see here. So the bit on the left oh, it's alright. Just gone a bit awry, but it's fine. We can go back.

So, yeah, this is the visual planner. Now this is the visual planner, and this is what we see. So this is what you you're doing right now. This tells you how far you're through it. It, breaks down all of the activities into subactivities, and it does that through the power of AI.

So you break things down with AI, and then you can tick the stages off for yourself, once you're done. The this is the daily planner. So here you can see that not only can I, put things in myself, but certain things I can loop? So for instance, I walk the dog at 7 o'clock. So that is on a loop.

It's something I do every every day at 7 o'clock. And if I don't do it at 7 o'clock, then I can reschedule it for that day for a different time, but it goes in automatically. It also integrates my calendar. So it integrates all of my calendars. So all of my meetings are all on there as well.

And then in terms of breaking it down, this is how it would do this. So, say, I was putting in do laundry, and this is mine. It would tell me so if I was feeling really if I was having a day where I was feeling really overwhelmed, I was like, I know I've got to do the laundry, but I can't even think where to start. This would tell me what to do, and I could take that big task and break it down into small ones. Onto Gemini.

So we're gonna do a little bit about reading and, summarizing, and we're gonna look at a couple of tools that can be used to support to support you with it. So the first one we're going to look at is an inbuilt feature of Google Chrome called reader view, which you can have in your extensions. So I think Microsoft and Apple have got their kind of equivalents as well. So if you see the little red circle, on the screen, it's circling, a little jigsaw piece and that's where your extensions will go. So we're gonna look at 2 examples of this straight away.

So this is, about a really useful Do you know what to play? No? Sorry. That doesn't play. Okay.

I apologize. That's my bad. So we're gonna look at reading and summarizing here. So really, really useful for students with any sort of visual stress really useful for students with any sort of visual stress or reading. So we're gonna go to our article.

We've got our article here. We are going to then click on our extension to our reader view, and you will automatically see that it sort of removed all the sort of visual stress there. It's really just broken it down completely, and there are different tools on the side that you can use. So we can change the font, of the tool. There's been change the font that might suit us, depending on what we like.

We can then increase it or make it smaller, decrease it. We can change the background depending on what background suits us or works best. These are ones my husband likes that are far too much I'm a I'm a Nord girl. You're a Nord girl. Dart.

We can have it read we can have the article read out loud to us, which is amazing for those people, and and it will highlight the text as it's going. So that's a really useful, facility. We can print it, the article. And the other next thing we can do is we can email it to myself if we want to, and then or save the article, if we're going to work with it later. There are other additional things that we can do with it.

So we can edit it. So we can highlight it. We can put different things in bold. We can put bullet points in. We can remove text if we want to.

So we've got the capacity to be able to edit that, which is a useful thing. We can put the photos back in if we want or we can remove depending what works for you. And, also, we can add ourselves some sticky notes if we want to make any sort of edits to it. So it's a brilliant tool that we can use to support

children who've got, like I said, any sort of visual stress or any attention difficulties, which I think is really, really helpful, to do. My favorite bit of it is the fact that it just removes all the adverts, all the different sort of, you know, the extra stuff that we don't want, and just make it really straightforward and simple for us.

So we're now gonna move on and we're going to look at Gemini next. Now, for this, we're gonna look at how we can use AI to summarize text using Gemini. Okay? So first thing we do is we're going to go to our news article, and we're going to highlight the text that we want, first of all. So we've highlighted the text from the article there, and we will copy that.

There we go. And then we're going to go into Gemini now, and we're going to give a command. We're going to ask this to summarize the text for a 15 year old student with a reading age of 10, I think it is, of 10. So you're doing it as the right maturity level. Absolutely.

So it's at the right maturity level, but at the at the right reading age. So you are an expert teacher. So we're then going to paste in the text that we've done simply and then press go. And what this has done here is it's now the same article, but summarized and suitable for somebody with that slightly lower reading age. And then we can give it a further command if we want to and put it into bullet points.

And by putting it into bullet points, we're chunking it into smaller bits of information. So right there, by using that tool, I've shown this to, lots of different teachers, and they love this because it's it just opens so much of students who are working at you know, there might be 15, there might be 13, and they're unable to access the reading material of that age. And there's a really interesting statistic that says, I think it's about a quarter of students now going into secondary school do not have a reading age of 11. So actually if we think about all those students who are unable to access the level of text that they will be required to at secondary school, that's actually really exciting that this is available for for them. Okay.

We're gonna move on. Okay. So how do you know how to prompt, Gemini? Now this can be used for Gemini. It can also be used for chat gpt.

So So I'm just working out which way my head should go. So this is called the prep strategy, and it's created by Dan Fitzpatrick, the AI educator. He has also enlarged it in now and prepare, but I think prep is a really great place to start. And what this means is you need to write a prompt, a simple prompt, and you can see mine there in green. I just want to design a lesson for students to help them improve public speaking skills.

That is it's basically I want you to design a public speaking lesson. That's my general prompt. Now I could just put in that, but I wouldn't get a very good output because I haven't been clear enough in what I really need. So the first thing we're gonna do is we're gonna give, the AI, the Gen AI, a role to act as. And in this case, I would like an expert orator and spokesperson to create this for me.

So that's how I want the AI to act. I also need to be explicit in some of the instructions here. So as you can see, everything written in red about how I want my lesson structured, is is is my explicit instructions. I've also got there my parameters. Okay?

So my parameters are the students are 16 years old, and the lesson should be 50 minutes long. Parameters are really every anything to do with numerical data. So anything in terms of age, length, how many, whatever it is. Whatever is numeric are your parameters. I've also got in there, some emotional kind of additions about why it's important that the AI gets this right and who the AI is going to be creating this for, and those are in yellow.

And in orange is my final one, which is to be sort of iterative with this, to be to be able to communicate more. I'm gonna also get the AI to ask me questions, that would help us to develop the lesson together.

So it's not the And also I was just thinking in that explicit bit, you can talk about actually some of your students on neurodivergent. Absolutely. If you were looking for being explicit for that, you could particularly add in that extra bit there and to be explicit.

Absolutely. So I used this recently with my daughter. So she's in year 12. And as I've said before, she's got, ADHD. She is a very keen being at school, signs herself up for everything, and it had a particularly crazy week.

She's got another one coming up, actually, where she'd got, she'd just completed the weekend of model diplomacy, and then returned to a sea of tasks on the Monday morning. And having struggled through Monday, she was just absolutely exhausted, and she took the next day off, with the permission of the school, with the determination to, like, hyperfocus, and to clear the clear her backlog and feel more in control. So we started we I was at home. We started saying, right, how can we actually do this? We wrote in a prompt.

We did this on docs so that she could kind of blurt everything out, and we could copy and paste it from the assignments that she'd been set. And we basically got the prompt together. This took us about 5 minutes. And, she wanted a learning plan for how she would attack these tasks and to help with some prioritization of tasks. And so the role that we gave was a year 12 student, so she could feel just like herself, but but was amazing into organization.

So it kind of did did the bits she was finding difficult to do. And the explicit detail we put in was everything she had to do. So all three pages worth of tasks, and the, and the parameter was how much time that she would have per day to spend on this. So we set her, like, 6 hours for 1st day, but then 2 hours, after that. So once we've got it how we wanted, we did put it into Gemini, which you can see here.

And then we had a look at the 3 drafts. They're all slightly different. This is in real time, so you can see how quickly it was able to do that even though the prompt was absolutely massive. We had a look at the 3 drafts. This is what, something like this, a learning plan, would look like, and it breaks it all down.

Once you've got it there, you can Once you've got it there, you can actually once you've had a look at the draft, decided which one feels right to you, you can also then share it into docs, or you can mail it to yourself. So as you can see from this image, the work's not done for her. And and this is makes her happy as she really worries about, like, AI being used for cheating. And it also gave her tips about breaks, about sleep, which made me very happy. Some things are better coming from Gemini than they are from your mother.

And and she tackled her massive sport BTEC assignment, splitting it into manageable tasks and ended up doing really, really well on this. Now how do we then split into more tasks? Well, we can use Goblin for that. So let's have a look at that. So we put the full specification of the task into magic to do in Goblin, and we added it with the plus button like that.

This is real time just to show you. So this is how it's it then splits up. This then estimates also the amount of time for each step. So very much as a guide, which are the going to be the longer ones, which are going to be the shorter ones. And as this, has been something that she's already been working on, the 21 hours one didn't worry her because she was like, yeah, but I've already done all the 21 hours and actually made her feel really good that she'd done most of it.

And you can also order the steps, differently by dragging the left hand button up and down. And you can again, you can export this into a Google Doc or a Word Doc so that you can, save it as a file. It also has, an app on a a phone, which you can then sync as well. Also on the Goblin site are some other tools which can help neurodivergent students and adults to to judge, the world around them. So if you get if you are worried about a message that you've received from a friend and you you're finding it

difficult to to understand whether they're making fun of you, whether they're being unkind, whether they're angry with you.

I think that my daughter, a lot of the time, thinks that other people are angry with her when they write and text to her. They can put this in to the judge, and the judge will interpret the, tone of the message, and help them to understand that. So, yeah, a great one. In the other way, the formalizer can also convert speech or writing. So lots of options with this one.

You can make it more professional, as you can see on the the image, you can also make it think, like, less snarky. You can bullet points large sections of test. You can, write more. So if you want to write more text, you can also do that. What do the chilies do?

The chilies tell it how much more professional. So if you want to make it slightly more professional, you do one chili. So it's how neurospicy do you want it to be? And the compiler is when you I've used this on quite a few times. Yeah.

It's definitely. When I'm feeling overwhelmed Yeah. I I will sometimes use this. It's you could use something like Gemini or ChatGPT, but this is just my kind of go to. It's on my phone as well.

So, I I just brain dump into it. And you can also as you can see, there's a mic Oh, yeah. So you can you can talk your brain dump in, and it's really accurate actually in turning, speech to text. And then you enter that, and then it turns it into tasks. And then you can use and you can literally move it from that into magic to do and then and get them ordered so that's really good.

And there's even a chef. So if you are having a particularly overwhelmed day and you're at home or and you don't know what you're going to make for your lunch, then you can just put in everything you've got in your fridge and it will tell you something you can make. So there's really fun things as well. Yeah. Absolutely.

Perfect for the busy teeter. So, hopefully, there, that's given you, lots of different ideas and things that you can take away, and go and experiment with, have a little look at in more detail. Hopefully, there's at least one thing that you've seen that you thought actually that's been brilliant for my class, and just giving you an idea and and going back to that kind of idea that it's about getting the balance right. It's about, you know, using these tools to be able to help you, not replace, but to help. And hopefully that, you know, life will be a little bit easier with some of them.

Absolutely. That's the whole purpose. And so thank you all for joining us today. Thank you. Thank you very much.