Transcript: The Digital Access Show

Digital accessibility, education, and neurodiverse learning

Introduction

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Narelle: Good morning and welcome to The Digital Access Show. Whoops! I've got to get my eyes focused. Yeah, they're focused. I'm looking for those people that don't know because I can't see. And I can still see large shapes. I see triple now, but I've got a bright blue Bluetooth speaker sitting up behind the camera so I can see where to focus. The tricks you do to try and make things accessible.

Narelle: Today's guest has been on before. And the reason I've asked Belinda to come on is we're talking about something I'm very passionate about, and that's education. Why is it interesting for digital accessibility? They go hand in hand. So I want you to meet Belinda Vesey-Brown from Brio Group and Meet Aandi. Belinda, thank you so much for coming on.

Belinda: My pleasure, Narelle. So I'm Belinda. I'm a short blonde woman and I'm wearing my red shirt today for a bit of colour on this public holiday on a Monday.

Education and Accessibility

Narelle: Belinda, what is your interest in education and where does digital accessibility and education meet?

Belinda: Digital accessibility has been what I've been living and breathing since 2010, actually, when we started doing digital document accessibility in conjunction with Vision Australia. Over that time I've seen a lot of documents go through that we've remediated. But the biggest thing that I see is from an education perspective,

particularly when you overlay it with neurodiverse kids. Their brains think differently, and I think the biggest misconception is that digital communication is mutual. But for neurodiverse kids, the way something is presented can either unlock their ability to learn or it can shut it down. It can be overwhelming. So where I've spent a long time making digital documents so that they can be read out, I think the bigger problem, Narelle, is how they're actually presented in the first place.

Narelle: Can you explain more? What are you talking about when you're saying the way they're presented? What do you see?

Belinda: When we think about digital accessibility, we talk about what tools do you test, what tools are reading out a document, and the WCAG standard and compliance. We talk about heading sizes, colour contrast, patterns on tables, and things like that. But I think the bigger problem is how it's being created in the first place—that cognitive load, the feeling of overwhelm when you actually look at a page. I see it with my son, who has now been diagnosed with ADHD. This is where it has all come up for me. I see him pull up his homework page—it's all digital now, they're on laptops—and the whole page is all words. Sure, it's a big enough font and there's enough contrast on the page, but he looks at it and he's overwhelmed. He doesn't know where to start. Then we have the homework struggle, and when I look at the page, I can see why.

Narelle: Yep. It is. And the overwhelm is because of the presentation?

Belinda: The overwhelm is, one, the cognitive load. If you've just got a whole page of words, neurodiverse brains immediately go into, "Well, that's a lot." Then they start to question their own abilities. "Oh, this is too hard." They think back to the classroom where they got something wrong, and suddenly the whole page feels overwhelming. They'd rather do anything else. So I think there's a disconnect with a lot of homework and with the way lessons are taught in schools. You've got a whole classroom of different types of learners—visual learners, auditory learners, students who like things broken down, some who are neurodiverse. We're all different, and that's a lot for one teacher.

Breaking Learning into Steps

Narelle: One of the things that used to be thrown at me was, “Hey, hop on the computer and play that game.” What's the difference between that and the assignment?

Belinda: The cognitive overload is different because games are broken down. Teachers can do this one-on-one by saying, “Let's just start this one little thing.” They take away the overwhelm of the page and break it down into little steps. What I really love about digital accessibility and online communication now is that it can be broken down and changed. If a child is interested in scuba diving, riding a dirt bike, or cooking sausage casserole, you can overlay the lesson with what they're actually interested in.

Narelle: And when you think about it, all these computer games are broken down, aren't they? You go to the next target. You do the one next step. Which is why it's really good for neurodivergent people. It teaches that step-by-step instruction, doesn't it?

Belinda: Yeah, it's broken down. It's interesting. There's generally colour, a bit of gamification, and little rewards. You feel like you're making progress. Even seeing a progress bar is helpful. We can all arrive at the same endpoint, which is what we're actually getting marked on, but our journey to getting there needs to be individual. To me, that's what digital accessibility is.

Narelle: I actually agree with you, because as we've talked about before, I am the mum of a couple of neurodivergent sons as well. Twenty years ago, assignments were too much for them, and back then I didn't have the knowledge that I have now to help them. That's one of the reasons I'm passionate about digital accessibility, because there are always kids out there that need help.

AI and the Future Classroom

Belinda: In the current education system, they all have the best intention, but they simply don't have the time to sit and customise something to every child's individual

learning style. And that's where I think the disconnect is. A lot of neurodivergent kids in particular, especially the ones in the families that we're talking to, they see their child—and I'm the same. I've got a 12-year-old who's ADHD. I see the confidence that's diminishing. It's just being eroded. And then before they know it, the story in their head is, "Well, I'm dumb and I can't do this." Then you've got a barrier to learning even more, and it's just compounding and compounding.

Narelle: And it flows through to the rest of their work life, doesn't it? Because when they go through everything—yeah, because my sons are successful men now, and I'm extremely proud of what they've done. And my normal son—so-called normal son—he's extremely clever as well, and he succeeded. Each of them had different abilities. David could just fly through his homework. David had other things that he needed help with, which most people would consider just normal things, isn't it? You know, teaching him how to cook, those things. These neurodivergent kids have got to learn how to cook step by step. They've got to learn everything step by step. Digital accessibility in education is about adding that step by step, isn't it?

Belinda: It really is. And, you know, with technology now, technology can create terrible barriers when it is one size fits all. But it can also, Narelle, be the breaking down of the barriers too, if it's used correctly.

Narelle: Where do you think teachers' knowledge needs uplifting, from your perspective as a mum with a 12-year-old son?

Belinda: I actually think a lot of teachers are doing a lot already. They've got a room full of students that are all unique, and they find themselves having a classroom with neurodivergent students, neurotypical students, with all different types of things. Even every day—I know myself, some days you're really happy and excited, and other days you've got a low mood. So they're juggling not only a very diverse classroom, but overlaid with whatever they've come in with in their day. They're trying to juggle that in an environment that is changing. And I think that they are doing more than probably what some of their predecessors have done in previous years, because as you said, we've got a lot more knowledge now. We know a lot more. Teachers are being taught to look for ADHD, ASD, signs of different learning barriers, and they're

doing what they can within the format, or within the parameters, of what education is currently. It's changing, but it's not changing very fast. You think about what they can do just this year alone with what AI is opening for us, and education is nowhere near that. So I think teachers are doing what they can and they're adapting. But I think where the real opportunity is, is where we can embrace a lot more—with safeguards—where technology and AI can start to customise something and do what one classroom teacher can't do, but do it many times in a classroom, individually for each of those students.

How a Future Classroom Could Work

Narelle: How do you see that working?

Belinda: Well, if you can adapt—this is my imagination. This is how I see it, and this is actually what we're working towards. I imagine a classroom in the future. You've got a teacher at the front. They spend 10 to 15 minutes—because that's about the attention span of most kids—and they give the context of what they're learning today. So let's say they're going to be learning fractions today. Then they all go back to their seat, they pull up their computer, and they pull up their fractions lesson. But the computer and the system already knows a little bit about them. So let's say it's you, Narelle, and you're sitting there. Imagine your 12-year-old self. You're sitting in the classroom and you pull up your fractions lesson, and you really love scuba diving and dirt bikes, right? Then your fractions lesson is served up to you with that as an overlay. So, you know, how many dirt bikes, divided by—then it starts to use your examples as ways that you can learn. But it's adjusting also because right at the beginning of the day, when you logged in, you checked in your mood and you're feeling a little bit overwhelmed today. So the lesson is broken down even simpler. So the only thing on the screen is the one thing that you need to think about right now as part of that curriculum.

Narelle: Oh, this is awesome. Oh, lovely.

Belinda: And then we start working. But then if you're not quite sure, or maybe you actually want to hear it today, you can have it read out to you. Click a little button and it would read it out to you. Or you might be struggling with some of your typing, so it's

correcting some of the words. Or with the fractions concept, you're not quite sure, so you might want it explained to you maybe some different ways, maybe with some different examples. And we don't move forward until you've got it. But you might be on a day where you're like, "I'm on today, let's go." And you get that concept really easily because maybe it's English today and English is your favourite topic, right? So you're like, "Yeah, I want to get into this." And the more you get right, the more the system keeps challenging. It keeps you going to the next level, keeps you engaged, and keeps rewarding you. And it's done in small chunks so you can see your progress, you can see when you finish, and then you get a little reward. Some of the rewards that we're finding are the best rewards are those ones where there's actually movement. Because I was talking to an expert—she's spent her whole life dedicated to all the different reflexes, so the primitive reflexes. And if those primitive reflexes aren't connected in our brains, we're not even open to learning in the first place. Some of the things are just tracking eye movements and these different activities that again can be customised to the child. So the reward is also a way of switching on their brain to then learn the next step. And that's incredibly exciting, I think.

Narelle: That is such—oh, love it. I seriously love it. I'm just thinking about all my sons, and all three of them would have excelled in something like that because it brings out a little bit of that competitive streak, but it's competition with themselves, which is a great thing. The teacher sets the boundaries of what's going to be learnt.

Belinda: Yes. And there are certain guardrails that they can't ask, right?

Narelle: Yeah.

Belinda: They get bumped back in.

Narelle: Yeah, yeah. You want to go out and ask again. Say you're not getting the answer. You've got to work it out. But, you know, at the same time, yeah, I suspect it's a great idea.

Belinda: That's a really good point you make, because there is this misconception that AI is just going—if you upload your homework into ChatGPT or whatever—just giving the answers. And that's a real risk, actually. That undoes what teachers are trying to do in the classroom, and we want to avoid that. There's actually some

research being done around digital dementia, where in those early days, if you're not using your brain to make those connections, you're actually not connecting, so you're losing your memory. It's a real thing. And so you want AI to not give you the answer, but you want AI to explain it in a way that equals your learning style, in a way that engages you cognitively. And I think that there's a real balance there to get that right.

Narelle: Yeah. And I could see, because my son—it's two of my sons, but one in particular—is so football mad that he would have just said, "Put AFL over the top of that." He would have sat there all day, no matter what it was. Or cricket. And he would have been as happy as Larry and sat there all day. Whereas trying to get him to do anything at school was a nightmare because it was overwhelming for him. And I was trying to—you know, and I was a busy mum. I was working and I was trying to help three boys with homework. Three boys under—less than three years between them. I didn't do it by halves.

Belinda: Yeah. I think if we can remove those barriers to learning—because I think everything starts with confidence, right?

Narelle: Yes.

Belinda: So one, your brain is switched on for learning. And two, you've got the confidence to believe that you can actually do it. And if we can remove the barriers for that, the sky's the limit for any child, regardless of their ability.

Belinda: So one, your brain switched on for learning. And two, you've got the confidence to believe that you can actually do it. And if we can remove the barriers for that, like the, the sky's the limit for any child, regardless

Handwriting, Motor Skills, and Inclusive Design

Narelle: Yeah. One of the things that interests me, though, in all of this is that hand-eye coordination is still so important. It's going to be important for everyone, regardless of what the computers can do, because you've still got to manipulate the mouse, you've still got to use the keyboard. What about handwriting? How would you incorporate that?

Belinda: Well, handwriting is an interesting one. I was actually talking to a dyslexia specialist, and she said that one of the signs of knowing if a child is dyslexic is through the handwriting. There's a lot that is being typed and done online now. And I think what handwriting is, and I'm not an expert either—this is just what we're seeing—handwriting is that hand-eye coordination. But what if we were to replace that with an activity that you did on screen, where you actually had to put your finger out and you had to track it and do a figure of eight, and it was a game perhaps? So you're still starting to form those neural pathways.

Belinda: Even as my dyslexia specialist said, if you get the child to look up and engage up, it all helps with switching the brain on. So the learning on screen can be directed. You know where the positioning of the words are. What the activity is getting you to do is actually switching on that brain, without you being seen as having to go to the special place with the special teacher because you've got special needs. It can just happen regardless.

Narelle: You'd be just one of the kids.

Belinda: You're just one of the kids. And I think Dr Edward Hallowell, who is globally recognised as an ADHD expert—he's written many books—says in many of his books that ADHD shouldn't be seen as a deficit. It's just a different way of learning. I really like the idea that all these kids are getting pushed to get diagnosed, but what if they didn't have to be diagnosed? What if learning could just adapt to them? Then they weren't seen as having a deficit. They just learnt differently, like everybody does. And we all have a role to play, right, in the village of life. Some of us are really detailed. Some of us love maths. Some of us are really good at English. Some of us are really good at farming, if you think about a village. Others are good at setting things up and planning for the future. Some of us are really good at research in a deep area to make sure that we all stay healthy. We all have a role to play. Not one is right and not one is wrong. We all just have our different abilities. And to go back to Ed Hallowell, if we can have education adapt to that child's learning style and not even have to have them diagnosed and seen as a deficit, how good would that be? What if the system just identified they had dyslexia and just started showing the letter forms in a different way, or doing activities as a reward that switched their brain on?

Narelle: And the same system could all inherently have the voiceover, the things that people with vision impairment like myself, or people with intellectual delays, could swap into easy reading mode or—

Belinda: Yes. And it's instant.

Belinda: Still within the guardrails—this is the curriculum and this is what we're teaching. This is what the child is interested in. This is what we know about this child. This is all the training of the experts that's guiding the lesson and what it's looking for. And what if we could discover something about a child just through their learning, and it actually helped solve it or gave them techniques on how they could learn, open up, and build their confidence?

The Teacher's Role

Narelle: Where do you see the role in the teacher? Do you think that would add a lot more work? Would it make their workload a tiny bit less because it is much more automated?

Belinda: I think the role of the teacher—especially if it's neurodiverse kids—what we're seeing at least is that human contact and peer contact is so important. So the teacher really facilitates that. They set the context. And then, as I described, if each child is checking in with their mood for that day, imagine if the teacher got this heat map of all the 20 or 25 kids in her classroom. She can see, well, this one is feeling overwhelmed and this one is this and this one is that. She could actually spend her time more meaningfully, working with the human in the loop, with the technology, to continue to build that child's confidence, no matter what type of learning style they are. I think the role of the teacher is so important because we want to keep kids in these learning environments with other peers because that's where they learn people skills. That's where they learn team. That's where they learn facial expressions and human reactions. Certain neurodiverse kids struggle with some of those facial cues, but it's so important to be learning about it. We just need to make sure that the learning environment is set up in a way that really helps everybody excel, not just a few.

Building the Solution

Narelle: And that's it, isn't it? It is so important. What have you been doing with these ideas? I'm seeing a lot of posts from you on social media, but particularly LinkedIn. What are you doing with the ideas that you've got?

Belinda: I'm so passionate about this. I feel, Narelle, that my life and my career to this point have led me to help solve this problem. I've had a background in marketing and neuromarketing, science, human behaviour. I've been working in digital accessibility for a very long time. I've now got a child—he's ADHD. I've myself been diagnosed with ADHD, which explains a lot of things. But I'm at the point now where I'm like, I just need to fix this problem. I know too much to walk by. They say that the standard you walk past is the standard you accept, and I can't walk past this knowing what I know. So we've actually started building some software, and we've got some students in that we're trialling in our founder circle. They're starting to really shape that solution. So the mood check-in, the adjustments of the lessons—we've got expert content that's informing the system. And then what we're starting to measure or track is the learning outcomes. We've only got a small number at the moment, and we're working with those parents that are struggling with homework and those parents that have taken their children out and are now homeschooling because the school system wasn't working for their child. And they're starting to see the results. We've got lessons being customised around Barbie, around makeup, around dirt bikes and scuba diving and fart jokes and cousin Noah. It's really kind of out there, what some of these topics are that engage children, and they can change it for every lesson.

Narelle: What are the results so far? What are you seeing?

Belinda: Well, we're still early days. But the thing that the content experts in particular are excited about—like my reflex expert—she can see what exercises have been served up. And then it's all about the amount of time because you have to do those exercises over and over and over for six weeks or more, right? They start to see. So we've got an environment now where she can start to track that. And over time, overlaid with the lessons and as more and more kids are in the system, she will get data or insights into what she's created or dedicated her life to that she's never been

able to see before, because we can track it. The role of music in learning is some of the other things that we're trialling. Not only just music to help keep your brain focused, but also what if you learnt Chinese because it was served up with a pop song of the day? What a great way, if that's your learning style, for that lesson—your lesson in how to learn Chinese—to be created differently.

Narelle: Oh my God. You're on a roll, aren't you?

Belinda: Oh, it's incredibly exciting. And having those with lived experience—because you and I have talked about this—when you've got lived experience, we need to be the ones that are shaping the solution. I don't have the one final answer. I want to hear from all the other parents and the students: what would actually work for you? What engages you? Because the technology is purely the enabler of these ideas to actually create an education tool that will truly adapt to everyone's different learning style.

Practical Advice for Parents

Narelle: What advice can you give the people who are listening—to the parents, maybe—that don't have access to these tools at the present time, as a parent of neurodivergent children? So what can you suggest?

Belinda: Well, I think if they can't start, they can't learn. So a lot of it is just being there, sitting with them, and breaking it down and just getting them to start. Doing the little things, seeing the little bits of progress, and acknowledging the little bits of progress that they've made, because it's all about building their confidence again. Because without confidence, we can't unlock learning. But also, if your child wants to ride around the house and you give them a different spelling word as they're doing that, then I've got a parent that's doing that and what a great way for that child to be learning. Yeah, getting outside, getting on the swing—again, my reflex lady said 15 minutes on the swing unlocks the brain for learning for the whole day. Get them outside, get them moving, and get them engaging in the ways that they learn, but breaking it down to one tiny, tiny step so that they start.

Narelle: And it could also be using AI to break the assessment down into tiny steps without giving the answers.

Belinda: Yes, and we want to be sure that we don't give the answers. I mean, a lot of us are using AI just to make our lives easy, but really that's not doing us a service, because we need to learn. We need to use it as a tool that, sure, leverages our time, gives us prompts to make us think about things maybe deeper or differently, but it can't just be our easy way out.

Closing

Narelle: Belinda, how could people get in contact with you to find out more about what you're doing with digital accessibility, AI, and education?

Belinda: Well, I would love anybody who's got a neurodiverse child in particular, who is struggling with homework, or you're homeschooling and you're trying to juggle and customise lessons—I can really help with that. But if you're driven and want to be part of a solution that's going to help, my goal is one million neurodiverse kids. One million neurodiverse kids is my measure of success. So if you want to be one of those and help shape this solution that helps those kids, I would love you to get in contact. So it's Coach Aandi, the name of what we're building. So it's coachaandi.com.au. And I'm Belinda@coachaandi.com.au.

Narelle: Oh, fantastic. Belinda, thank you so much for coming on the show. I am actually really—yeah, I'm inspired. I wish it had been there when my kids were younger because it might have made a difference for my kids as well. It would have been so awesome to be able to say to my boys, "Don't panic. I know you're overwhelmed." But again, I didn't have the knowledge that I've got now. Like anything, hindsight's wonderful, isn't it? So thank you.

Narelle: And look, if you like what we're doing, please like, share, review, subscribe. We always love feedback. You can find all our shows on the DASAT website, dasat.com.au, but also on YouTube on The Digital Access Show channel. And we will see you next week. Thanks so much, Belinda.

Belinda: Thanks, Narelle. Bye, guys.

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