

# Podcast Special: Dylan Wiliam on effective questioning in the...

*Jo Earp*

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*Thank you for downloading this podcast from Teacher magazine, I'm Jo Earp.*

*My guest today is Dylan Wiliam – Emeritus Professor of Educational Assessment at University College London. He's a former school teacher (more of that later), over the last 15 years his academic career has been focused on the use of assessment to support learning, and he now works with teachers all over the world on developing formative assessment practice.*

*I caught up with him in Melbourne to talk about effective questioning in the classroom. Over the next 20 minutes, he'll be explaining what's wrong with the traditional teacher approach of 'I'll ask a question and you put your hands up to answer', sharing a classroom display technique called 'the parking lot', and describing how to plan your lesson around checkpoints that he calls 'hinge questions'.*

**Jo Earp: Hi Dylan it's always great to catch up with you. Now, our podcast topic today is effective questioning in the classroom. The last time that we spoke in Melbourne you shared your [tips for teachers and leaders who want to change their practice](#). One of the things you mentioned in that video was that it involves lots of small steps and sometimes teachers try to change too much, all at once, their teaching falls to pieces and so they go back to some kind of 'safety' or what they know best, I guess. When it comes to effective questioning in the classroom, one small, simple, but effective change that you recommend is implementing a no hands up policy. So, that's where we'll start. What's the problem with the traditional approach then of – ask a question, hands up to answer?**

**Dylan Wiliam:** The real problem is that teachers tend to ask a question, have the confident, articulate students volunteering to respond, the teacher gets an answer from those students and, therefore, if they give a correct answer the teacher tends to move on. All I'm saying is, if you're only hearing from the confident, articulate students, the quality of your evidence about who is getting it and who is not is rather poor. So the big idea, in terms of classroom questioning, is 'how good is the evidence you have?' – and if you're only hearing from the confident students, you can't be making decisions that reflect the learning needs of a diverse group of 25 or 30 students. So it's about broadening the evidence base, getting better evidence of what's happening in the heads of the students in the classroom, there and then.

... I think there are two good reasons to ask a question. One is to collect evidence that helps you make decisions about what to do next. The other, of course, is to cause students to think. So, I think that there's a range of things we can do with classroom questioning but, in general, if the teacher is asking a question for the purpose of finding out whether to move on or to reinforce a point, then you need better quality evidence than you can get by hearing only from the confident, articulate students.

**JE:** Of course, they're still being encouraged to put their hands up if they want to ask questions – we're not saying no hands up all in all. But, for answering teacher questions then, students know they can be called upon. We did a podcast with [Andria Zafirakou, the UK teacher who won the Global Teacher Prize](#) last year, and she said this about her students: 'I need them to feel that they can fail and that they can really struggle and that it's okay to struggle. I need them to be working with other students and appreciating other students' work. They will be called upon to critique, called upon to evaluate, called upon to give opinions constantly.' That's another aspect – having this no hands up policy means that you need to create an environment where students feel safe, they feel able to contribute, where it's okay to present an alternative view, where it's okay not to know ...

DW: Absolutely, and so for me I think the really important point is what Doug Lemov in his book *Teach Like a Champion* calls 'no opting out'. I'm not quite so sure that random questioning is necessarily always a good idea – I think the really important idea is that every student in the classroom knows that they can be expected to be asked to respond to a teacher question, or can be asked to comment on something another student has said.

If we want to create a community of learners, it's not enough that students are quiet when other students are speaking – they have to be listening appreciatively to each other. And so, I think, it's also part of making sure that students know that, yes, I expect you to be listening to your peers' comments and I might ask you for a comment on that; not because I'm trying to catch you out with a 'gotcha', I'm genuinely interested in what you think about what somebody else has just said. I think that's the kind of attitude we want teachers to be communicating to students, that you are in this classroom, you are valued, you are important, we care about what you think about these ideas.

**JE: And so that might mean setting up some ground rules (well it does mean setting up ground rules), and that atmosphere doesn't it? There's no point in implementing this kind of policy if clearly the students don't want to speak up in the classroom.**

DW: And I encourage teachers to allow students to do a kind of 'opt out'. So, some teachers allow students to put their fingers on their chins to show they're still thinking – if the finger is still there for 20 minutes later you might want to challenge the student on it! But the really important idea is, this is meant to be a way of advancing the classroom practice, it's not necessarily a way of intimidating students. Some students are less confident than others.

My own experience, and the experience of teachers that we've worked with, is that students get very quickly used to the idea that they can be called upon at any time and it's far less scary. What is most interesting to me of all, is that it's the high achievers who dislike this more than the low achievers. The low achievers obviously have to pay attention, that they're not used to doing, but the high achievers say the reason they hate this policy of no hands up is they say 'I always seem to get picked on when I don't know the answer'. And so the really important point is, when we see teachers using these kinds of ideas, the classroom becomes more cohesive because students see that even the highest achievers get things wrong. The thing the high achievers hate most of all, they say 'oh, we seem to get picked on when I don't know the answer', which of course they think is horrifying but everybody else thinks is pretty cool.

**JE: This is maybe one of the things new teachers, and experienced teachers actually, struggle with – how to cut down on the number of questions that you ask in class. It can become quite overwhelming can't it, that kind of scattergun approach. So, how to slow down. And then, coupled with that, getting students to think (you mentioned that earlier); questions that engage them in productive thinking.**

DW: I think the first thing is I think teachers need to plan the questions they want to ask with more attention than they're used to. So, typically, teachers just kind of make up questions on the spur of the moment. The difficulty with that, is that often those questions, if they're not very carefully designed, can be ones where the students can answer correctly without having the thinking or the ideas that the teacher is valuing. So, the worst thing that can happen is you get the right answer but in fact the student is not actually on the right track, but because the question wasn't very well worded, they can get the correct answer for the wrong reason.

So I think that's an important point – just thinking about questions as being much more like a 'set piece' and spending more time on that one question, and maybe getting a response from every single student, for example, by having students use their fingers to show 1, 2, 3, 4 or 5 fingers for A, B, C, D or E with a multiple choice question.

The idea is that, again, rather than having just the 'usual suspects' speak, we actually have a randomly selected child speak or then maybe getting answers from every single student. So, a teacher might ask a question like, you know, 'is a square a trapezium?' and ask every single student to vote thumbs up or thumbs down. So 'do you agree with this? Yes or no?' – everybody votes, and that gives the teacher information about who to draw on. So you might actually ask students to vote yes or no on some important issue like which country was most to blame for the outbreak of World War One. And some students might choose Russia, and some students might choose Serbia – but then the teacher can organise a discussion in a more coherent way by drawing responses from some students who think that one agent was more at fault, and then bring in the other ones later on. So the whole idea of trying to orchestrate your classroom discussions by knowing what students are likely to say before you bring them into conversation – that leads to a much more structured conversation.

**JE: Actually, just you saying that, yeah it's kind of ... as a former teacher, that situation where you can ask a question, you'll go to one person for an answer and you'll say 'okay, anybody else' and they'll go 'yeah, same answer' – and it prompts people, doesn't it, rather than knowing what their original thoughts were.**

DW: Yes. So, we can use multiple choice questions with finger voting for things where the students are correct or incorrect. But we can also use them for opinions, and that allows teachers then just to have a more logically organised discussion, and make sure the issues are dealt with in appropriate depth, rather than having one student forestall discussion by just coming up with an answer that everybody else says 'that's fine'.

**JE: That's a great way of looking at it. The other thing I was thinking of – what about 'parking questions' in the sense that, these discussions that lead to further questions that you might not have time for there and then, or maybe they're a little bit off track. What would you recommend there?**

DW: I think it's really interesting, in terms of teacher expertise, the difference between experts and novices. So, novice teachers (and I'm talking about very early in their careers, could be still in preservice training), but novice teachers when a student gives an unexpected response or asks a strange question, tend either to completely ignore that or (and this is probably even worse), they go down the rabbit hole.

**JE: Yeah, we've all been there as well!**

DW: They pursue this answer, even though it is not particularly relevant. Expert teachers are very good at determining whether a strange or off the wall question from a student is something that can be used to advance the whole class's learning. And so one of the things you might do is to say 'that's not relevant to the discussion we're having, I'll sit down with you and talk to you about that afterwards' or the idea I really like is the 'parking lot'. So, you have a formal parking lot on the wall of the classroom where questions are parked and you say 'this is a big question, I don't think we can deal with it here – I want to park it in the parking lot'. Some teachers, if there are three or four questions on the parking lot, they make parking lot time – so, maybe once a week anybody who has been thinking about some of the questions in the parking lot can offer to make some advanced discussion on this question. I think there are two things: one is, it respects the student's questions; but I think it also sends the message that some questions are so big that they can't be dealt with in just a couple of minutes. I think it's very respectful of students' thinking to say 'that's a big question' and 'we need to do that question justice', and I'm not just going to say here's the answer because, actually, we need to think about it in more depth.

**JE: That's another great tip – I'm sure people will be trying that one out. Now, is there still a place then for that kind of quick recall learning, that retrieval of information? Is it just going through the motions, for the teacher and for the student, that kind of questioning?**

DW: I think there are some things that you just need to check that they know it. So, if I'm teaching Science I want to know that every student knows the units that we use for measuring force.

And there's nothing wrong in practising that quick retrieval, because as the most recent work on memory – especially the work of Robert Bjork at UCLA – has shown, retrieval of things from memory increases how thoroughly you know things. And so this idea of retrieval practise; every time you retrieve something from memory, it makes the memory stronger. We imagine our memories are like CDs that we read off, but when you play a CD it doesn't change the CD at all. Every time you retrieve something from memory, it makes the memory stronger. So that kind of rapid fire can be very useful for improving students' long-term recall.

**JE: So, as long as we use that in the right place. Now, of course, you're a former classroom teacher yourself (Maths and Physics). You've said the decision that you used to make most often in the classroom was 'can I move on?'. We've talked about how it needs to be a better process than simply just asking a question, getting kids to put their hands up and so on, saying 'oh well, that's great' and moving on ... it doesn't tell you much, a lot of the time we're none the wiser are we about who understands what. Instead, you suggest teachers use 'hinge questions' at least every 20 to 30 minutes. What is a hinge question then and what does that kind of technique look like in class?**

DW: Let's take a step back. The first point is, most teachers plan their lessons as if they're going to go perfectly ...

**JE: Yes.**

DW: ... and we suddenly find that no lesson plan survives the first contact with real children. And there you are scrabbling to catch up and to figure out what to do. What I'm saying is, let's plan our lessons with checkpoints in them.

**JE: Right.**

DW: So, if you've got a 45 minute lesson, 20 minutes in check that the students are still with you. The idea is, you write a question that you include as part of your design of the lesson and 'at this point I'm going to check that the students are still with me' – and I carefully plan the question I'm going to ask at that point, so I can get some kind of response from every single student. It could be finger voting, it could be ABCD cards, it could be mini whiteboards. It doesn't really matter what technique, the important point is the teacher plans the quick check for understanding into the plan of the lesson, and then you get the evidence, and then you make a decision. So the whole lesson 'hinges' around this point.

There's a hinge in each lesson, and if the students get it correct you move on and if they show that they don't yet understand it you might go back and teach it again or, if half of them get it right and half of them get it wrong, you might pair them up to actually have a discussion. The important point is, every lesson becomes almost like a contingent process – you don't know where you're going to go until you get some evidence.

I sometimes describe formative assessment as being pedagogies of responsiveness and pedagogies of engagement. The idea is, we should actually find out what our students are learning while they're still learning, and then respond to that. And then we can't rely on just the usual suspects, we have to get evidence from every single student. So, as well as being responsive, we have to engage all the students in giving us information, so that we can make decisions that genuinely reflect the learning needs of all the students in the class, rather than those who are happy to share their thinking with us.

**JE: Of course, the obvious question not to ask as a hinge question is 'is everybody with me?', 'everybody understand?', 'yes ...'**

DW: Exactly. And you can just get students raising their hands. But on the other hand if you, for example, are teaching balancing chemical equations and you've changed it a bit, you've changed the quantities of some of the elements, some of the compounds, you can then say 'is that now correct?' – and often, [you can] leave one deliberate mistake in there and ask students if that's now correct. That's really different because, if they show thumbs up they've shown you they haven't got a clue what they're talking about because there's still a mistake up there, but they also know that if they show thumbs down then you're going to ask them to come up to the board and fix the mistake. So, that's the big idea I think, rather than asking students 'are you having a nice time?' we create a culture where there's no place to hide – you have to get off the fence.

**JE: What about, I'm thinking as well we mentioned slowing down, giving students time to respond, not wanting a quick, bam, reflex. ... You've got to give them thinking time.**

DW: Right. ... that's the idea behind the hinge question is to have, it's almost like a formal set piece. So, you've spent time thinking of a question – you need to use it well. So, I would say, you ask the hinge question, you maybe then ask the students to think about it. Now, I would actually encourage, because of what we're learning about the importance of retrieval, rather than going straight into the sort of 'think, pair, share/talk to a neighbour' actually ask the students to try to retrieve the answer on their own to begin with. So, giving due weight to the 'think' in think, pair, share. So, first of all students try to retrieve the answer, and then they share their answers – I would typically say, at least a minute, especially if it's a thinking question, for students to assemble their thoughts, to think through the issues, and then also to prepare the words that they might want to use in response to that question, so they're less likely to look like a rabbit in the headlights when we actually pick on them for a response.

**JE: An important aspect, as we mentioned, is coming up with a suitable question. It needs to be something that they can't get right for the wrong reason, if you like. So, you mentioned you would you that part of your lesson planning – building in these questions. You definitely wouldn't be able to come up with these questions on the spot – unless you're extremely experienced at this, I guess?**

DW: Well, I think for the people who are very, very experienced, maybe that every moment in a lesson is potentially a hinge. But, for most of us, we actually will do much better if we plan those questions carefully. And, of course, the way you do that is by starting from all the misconceptions that you know students might have.

So, the idea is that these questions that we are using, these hinge questions, we often do them in multiple choice format, for example, so that then all the incorrect options can be well known misconceptions. These questions become like a repository of all we know about the difficulties that students have with this content. So, there's one very nice question from Jonathan Osborne at Stanford University about measurement: How many times do you need to measure if you're doing measurement in a Science classroom? And one of the incorrect options is: If she is really careful, she only needs to measure once. Now, that looks like a really plausible response. What makes that a really attractive wrong answer to many students is it looks correct – if she's really careful – but, of course, the correct answer is: She needs to measure many times to know how much they vary before she actually decides how many measurements she needs.

And so, those kinds of questions, basic ideas of all we know that the students get wrong, as being a tool, if you like, for coming up with really helpful multiple choice questions.

**JE: And, presumably that's a teachable moment as well where somebody has come up with the wrong answer and you can then discuss that misconception and unpack it a little bit – not stall, but know that that's what's happening.**

DW: Absolutely. Typically, when you base the incorrect answers on misconceptions, you can actually get that much clearer guide about what to do next. If they get it wrong, and all you know is they got it wrong you're just being told 'teach it again, but better'. If your incorrect answers relate to well-known misconceptions you not only know what it is they're getting wrong, but why they're getting it wrong and what you might then do to help them move forward.

**JE: Finally then, for those teachers wanting to make a change the starting point is always reflecting on current practice. Have you got any tips? Is this something you can do on your own? Is it a case of talking it through with someone else? Would you be inviting a colleague in to observe, for example, and give feedback? Videoing yourself? How would you assess your own, reflect on your own practice and see where you can improve?**

DW: My initial answer is 'all of the above'. So, it's often said to me that you can only do this if there's a culture of openness in a school. There's no doubt it's easier if that's the case, but if you can't find anybody else to play with you, you can still do this on your own.

So, I think the first thing is to actually start thinking about questions that you could generally use half way through a lesson to check students are still with you. And, you know, like making pancakes, the first one is often one you have to throw away – so don't worry too much about them, just try them out and if they're not working try making some changes. But then as you get more confident, as you get more experienced, you may invite some colleagues in. Some teachers find it quite useful to stick one of these rotating camera stands, so you can actually take a smartphone with a movie camera and you can actually put these things at the back of your classroom and video your own practice. Some teachers will be happier looking at themselves before inviting a colleague in.

So, I think there's no real standard answer here. The important thing is, formative assessment is really getting teachers to think about two things: one is 'what did I just do as a teacher?'; and 'what did my students learn?'. As long as the teachers are reflecting on that fundamental relationship between what you did and what your students learned, you will always be able to advance your practice. I think that's the key idea, is just constantly exploring the relationship in what you did, what the students learned – that's the key to effective professional development.

*That's all for this episode, but if you want to keep listening there are 120 podcasts in the [Teacher archive](#) available to download for free by visiting [acer.ac/teacheritunes](http://acer.ac/teacheritunes) or [soundcloud.com/teacher-acer](http://soundcloud.com/teacher-acer). As with all our episodes, the full transcript of my chat with Dylan William is available at [teachermagazine.com.au](http://teachermagazine.com.au). That's where you'll also find links to subscribe to our podcast channels on iTunes and SoundCloud, or to our [email bulletin](#), so you never miss a story.*

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