

## Transcript

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Compere: **PETER J CASEY** Summary ID: **C00033362731**  
Item: **DISCUSSION ON MATHEMATICS AND RELATED ISSUES.**

**INTERVIEWEE: PROFESSOR PETER TAYLOR, AUSTRALIAN  
MATHEMATICS TRUST.**

Demographics:	Male 16+	Female 16+	All people	ABs	GBs
	6300	8100	14400	4300	9700

**PETER J CASEY:** Now, because this is the ABC, I have an interest to declare. I'm about to declare it.

I, Peter J Casey, loved doing maths at school. I was never happier than factorising a quadratic equation.

According to Professor Peter Taylor, I may be a dying breed. He's the head of Australian Mathematics Trust, which is based at the University of Canberra, and he would like to see the way that maths is taught changed.

Hi there, Professor Taylor.

**PETER TAYLOR:** Good morning, Peter.

**PETER J CASEY:** So, is your essential thrust with the way maths is taught in the classroom or is it the way we think about teaching it?



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PETER TAYLOR: Let's just start, I've been invited and - by the ICMI, which is the international professional body of maths educators, to commission a study on challenge in and outside the classroom.

PETER J CASEY: Right.

PETER TAYLOR: And basically, this has been a six year project and we've just finished it. I think that, basically, whereas we've not been able to establish a measure by which challenge improves the output of a student's learning program, we all believe it helps very much. And we can get into a bit of a rut by having a very well defined syllabus and lots of past exams for HSC, which students can train for and...

PETER J CASEY: Right.

PETER TAYLOR: ... might get them the best UAI, for instance, but may not prepare them adequately for the challenges that may lie ahead of them.

PETER J CASEY: What do you think would prepare them better for the challenges that lie ahead?

PETER TAYLOR: There's a, I think, a need for the syllabus to be more open and allow greater access to problem solving. Now, for instance, as an example, Australia is, at the moment, on the verge of discussing a national curriculum, and it may be an opportunity to discuss this.



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For instance, in some countries, such as Singapore, the issue of problem solving is directly addressed in the syllabus. It may not be the reason they get a good output, but - and Australia might do it in a different way...

PETER J CASEY: [Laughs] I'd like to come back to the national curriculum in a...

PETER TAYLOR: Yeah.

PETER J CASEY: ... minute, if I could.

PETER TAYLOR: Yeah.

PETER J CASEY: What are the kinds of problems that you think set the right, sort of, challenge?

PETER TAYLOR: They can be just problems which use the mathematics which students already know, but they might be applying the mathematics in a different context.

For example, if they enter a competition, they're almost certain to be asked to use their mathematical skills, but probably in a way they haven't seen in their own classroom.

So there are ways of the teacher finding challenges outside the classroom, which they can present to their own students. And...



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PETER J CASEY: You mentioned, Professor Taylor, the national curriculum.

PETER TAYLOR: Yeah.

PETER J CASEY: Australia is about to have a somewhat involved discussion, I suspect, on national curriculum. One of the advantages that's touted of the national curriculum is that it is clearly defined and the content is rigidly decided upon. How can you reconcile that with an open approach to problem solving?

PETER TAYLOR: That's a - well, that's a very good point. But it can be done and Singapore's done it, for instance. You basically make sure that there's time paid in a classroom for students to study - well, be challenged with problems which might be in different context. And to make sure that the assessment somehow is geared around that. Singapore does it.

PETER J CASEY: One of the, of course, things that you hear from students is that they find maths scary. In fact, you often hear it from maths teachers, if they've not, perhaps, had enough experience teaching maths. Do you think this adds to the level of scariness?

PETER TAYLOR: It can. And the problem is that the teachers need to be, you know, well trained to be able to handle the situation, you know, psychologically as well as be confident with their own maths. And - whereas



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most of our teachers, and many of our teachers are really highly professionally trained and everything like that, unfortunately, we can't get enough of them.

PETER J CASEY: Indeed.

PETER TAYLOR: There's a shortage of maths teachers.

PETER J CASEY: Look, on the subject of money, is this kind of proposal likely to cost the Government more? Should they be funding it more or is it resource neutral, as they say?

PETER TAYLOR: I think that it doesn't need to cost more money, but it certainly requires more effort by the people in the planning process. I'm not saying that I've got a quick fix...

PETER J CASEY: No.

PETER TAYLOR: ... or anything like that. I'm just suggesting it be part of the debate, and that we look at other models and realise that one of our aims is to prepare students with life skills, not just those students who can pass exams of a certain type and that we debate the matter [indistinct].

PETER J CASEY: You would certainly, I think, reduce the number of occasions on which a student might say, are we ever going to use this.



- PETER TAYLOR: That's one of the issues that's always been around mathematics, that syllabus planners have been too focused on the use of particular aspects of mathematics. And really, learning mathematics is not just that. You do need to have the mathematical skills to handle every-day situations. But much of the mathematics that's being taught helps engender methods of reasoning which, in the end, make students better employees and better problem solvers.
- PETER J CASEY: And hopefully, happier, more useful citizens.
- PETER TAYLOR: Absolutely.
- PETER J CASEY: Indeed. Thanks Professor Taylor.
- PETER TAYLOR: A pleasure.
- PETER J CASEY: That's Professor Peter Taylor. He's the head of the Australian Mathematics Trust based at the uni of Canberra, and he'd like to see us doing more problem solving.

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