

TRANSCRIPT: Interview with 1233 ABC Newcastle

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Professor Ian Chubb spoke with ABC Newcastle's Paul Turton about his visit to the Hunter region, the importance of science education and ways to improve teaching of science, technology, engineering and mathematics (STEM) subjects.

PAUL TURTON: According to Professor Ian Chubb, Australia's Chief Scientist, it's time to do what so many other countries have already done: take a long-term strategic view of STEM's pivotal role in securing a stronger Australia. The Chief Scientist will be speaking at a public meeting at Newcastle City Hall at 4.30 this afternoon. He joins us now to whet your appetite.

Professor Chubb, good morning. How are you?

IAN CHUBB: Morning Paul, I'm well. How are you?

PAUL TURTON: Fantastic thanks. Have we taken our eye off the ball in regard to science a little bit?

IAN CHUBB: Yes.

PAUL TURTON: So what should we do? Obviously the community's approach to those key subjects needs to change and I guess that's part of what you're doing.

IAN CHUBB: Well, it is. I think the world around us is changing very rapidly and when you look at that world around us you see science well and truly embedded in the core of our lives. The better we are able to do science, or the better we're able to understand at least how science works, then the better we'll be for it. When we have to make choices as citizens or when we're trying to encourage political leaders to make decisions, the better informed the decision the better the outcome. And the better we understand the methods of science, the process of science broadly in the community, the better those outcomes will be.

PAUL TURTON: We're told all the time via the popular art forms of this changing world, whether it's the Jetsons or the Orwellian future or sci-fi at its most extreme, we're getting clues all the time about what the future might hold for us and some of those predictions are already playing out. Are we totally embracing the concept? Do we get it?

IAN CHUBB: Well, not as well as we should. I think there's been a rhetorical commitment for quite a while but the reality is we've got to get some action now and the world, as I said earlier, is moving away from us. In the United States and the United Kingdom, most of the countries of Europe and certainly many of the countries in our region, they're all basically focusing on a two-pronged agenda. One is to make sure that the level of science education broadly available across the community is quite high, so that when people finish school for example, even if they go on to be

lawyers or accountants or farmers or miners, they have some understanding of how science works. So it's increasing the level of science literacy within the community. But embedded within that of course you've got the people who want to be scientists and who want to work as scientists, whether in a laboratory in a white coat or in another part of the economy, but using the skills that they've developed through education in science to apply to whatever that industry might be.

PAUL TURTON: So how much of the change for the future is going to come from a different mindset? In other words just changing the way we think about how jobs will play out in the future, the fact that a lot of stuff is going to be done by machines for example, is it simply a matter of changing our mind and all of the little things will then follow?

IAN CHUBB: Well I think probably yes. I think it's a deeply cultural thing. How many people have you spoken to in the last few months who have been virtually proud to say that they don't understand mathematics or they're no good at mathematics or they don't understand science? Try saying that about Shakespeare or Renoir and there's a completely different response.

I'm not saying this is a peculiarly Australian thing, I think it happens in many countries in the world. It's just that most of those countries are now doing something about it, so they're supporting their teachers better, they're preparing their teachers better, they're encouraging their teachers, they're recognising the central importance of the teaching profession in all this. And I don't think we've done that yet, or not nearly enough anyway.

PAUL TURTON: Enrolments in the science courses tend to be down in our schools. I know depending on variations there can be said to be a recovery of sorts underway at the moment. They just seem to have lost their glamour though. Are we selling our sciences long enough to young people?

IAN CHUBB: I don't think we are, and I don't think we're making them interesting enough when they do study them at school. I've been saying for a long time now that science has got to be taught inspirationally and the best way to teach it inspirationally is to teach it the way it's practised. Science in practice is awesome. If you're actually an experimental scientist and you design an experiment and it goes wrong you learn a lot from that; it's not that it goes wrong, it just informs you differently. You've got a mix of responses as a scientist. But to teach it blandly out of a textbook I think doesn't actually give the student that sense of excitement that there is when you suddenly understand something better, even if you don't go on to be a scientist, or you do something that gives you some insights into something that wasn't known before. All of those things are just mind-bogglingly awesome, so that's how it ought to be taught. In order to do that we've got to support our teachers, we've got to recognise the importance of teaching and we've got to make sure that we give them the maximum opportunity to draw the talent out of these students.

PAUL TURTON: Unfortunately you can't have a Brian Cox in every classroom. Ironically now there's never been more media focusing on science and nature. You look at the availability of audiovisual materials for young people and there's plenty of material out there, so it's not as though they're not being exposed to the opportunities.

IAN CHUBB: Well that's true and then they go back into a classroom where, in Australia for example, the Australian Mathematical Sciences Institute in Melbourne estimates that something like 40% of teachers teaching mathematics are out of field in early secondary school. So it's hard for those teachers to encourage the students who might go off and see something or, watch Brian Cox in the evening, go back into class and I think come back to earth. So it is, I acknowledge, a very complex issue but the point is that we human beings tackle complex issues. It takes the will to do it.

PAUL TURTON: Newcastle has reinvented itself a number of times and there's been a fair bit of innovation associated with the Hunter region over the years. How well are we placed in relative terms to move forward with what you would describe as a generation of ideas, or creating an environment where ideas proliferate?

IAN CHUBB: Well partly Paul I'm going up there to learn. I've been told, and today I'm going to be able to see things that are being done. But from all that I've seen and read and heard so far then I think Newcastle, the Hunter region, has taken some really good steps.

One of the things that we have to learn in Australia is that we can learn from the good things that are being done in various parts of the country, rather than quarantining them to one particular part because somebody with some spark and energy and drive and commitment has created a particular sort of environment. We need to make sure that we can learn from that and translate it across Australia. There are lots of good things being done in various parts of Australia but they're relatively small-scale and relatively local in influence. So it's really a question for me today of finding out, learning a lot, meeting a number of people and then thinking about how much of this could be part of a federal government push to improve science and science education in Australia.

PAUL TURTON: Professor Chubb, good to talk to you and best of luck with all of your meetings today.

IAN CHUBB: Thanks very much Paul.

PAUL TURTON: Professor Ian Chubb, Australia's Chief Scientist, in the Hunter for a variety of meetings including a public lecture at Newcastle city hall at 4.30 this afternoon. That's almost full, so if you'd like to be there you'll need to make a booking.