

Actuaries as Educators with Adam Butt

Interview Transcript

Julia Lessing: Hi everyone, today we're talking about a topic that is very familiar for every actuary, we're talking about actuarial education, and joining me for this discussion today is Associate Professor Adam Butt, who is the Head of Actuarial Studies at the Australian National University, or ANU. Adam, welcome, thanks for joining us!

Adam Butt: Thank you for having me, Julia.

JL: Adam I was thinking it seems like only yesterday that you and I were sitting in Shauna Ferris's ACST 151 undergraduate Actuarial studies class back at Macquarie University, but it wasn't actually yesterday, it was in fact literally last century.

AB: You don't need to say that.

JL: But after University you went on and had a big corporate role and you got qualified as a fellow, but then you made a big shift and moved from corporate life into academia. What prompted that change for you?

AB: So, when I was at University, I was doing part-time work as a maths tutor and I guess what I really enjoyed most about that was the moment of the student learning something new, having a breakthrough that they did a concept they hadn't understood, that they now understood and my part in that process of finding different ways to push the student down that path and I found it very rewarding.

I sort of knew even at that stage that I had an interest and perhaps a bit of an aptitude towards teaching. I'd also had a number of conversations with John Shepherd, who was our Actuarial Control Cycle lecturer, a name that you'd be well familiar with, I'd say name that a lot of people who are watching this would be well familiar with about the idea of getting into teaching at some point in time. I didn't think a huge amount more about it at that stage because I knew there was extra work that needed to be done before moving in that sort of direction, so I went in the more standard career path direction and I found myself... in that role I found myself a little bit like a really small cog in a very big wheel and it wasn't quite clear to me exactly, how my contribution fit into that very big wheel.

Now that's absolutely no negative against Aon, who I was working for at the time my colleagues were wonderful I had a really good time working with them, but it just wasn't quite the right fit for me personally. One of the things I really enjoyed about tutoring and then teaching is you very clearly see the fruits of your work very immediately as well. You're having a conversation with a student and you can see the light go off in their eyes when they get something they didn't understand before and I found myself really wanting that again, really wanting to feel that immediate impact of what I was doing.

So, I guess that was the catalyst for going back and investigating it a little bit further and I was lucky enough at that point in time that a job opportunity at ANU came up. Back 20 years ago when this was happening there wasn't such a need to have a PhD already I was able to do a PhD part-time whilst commencing the job ANU it was the classic I'm going to move to Canberra for four or five years to do a PhD, do the role ANU and then move back to Sydney, and that was 19 years ago. Yeah. I never ended up moving back.

JL: Yeah, so seeing that aha moment when you're teaching something to someone and seeing that penny drop and realise that you've had that contribution to their knowledge and skills, that's what you found really rewarding and something that you kind of missed in your corporate role.

AB: Oh definitely.

JL: That sort of called you back to teaching.

AB: Yeah, and I mean, and I'd even gone so far down that rabbit hole that I'd enrolled in a teaching degree at Macquarie before the ANU job came up thinking that I'll move to maths teaching and who knows where things will go after that and it was just serendipitous that the opportunity at ANU came up, would have been... I moved down here I think in January or February 2005, and I was about to start the teaching degree which obviously I didn't complete at that point in time.

JL: Yep, you started teaching at ANU and you started your PhD as well.

AB: At the same time yeah.

JL: Wow, so you went from your Fellowship exams straight into a PhD and a brand new industry and a brand new job. That sounds like a big challenge!

AB: It was actually. I was actually lucky in way, I did my last Fellowship exam in 2004 knowing that I had intended probably to move into either academia or teaching at that stage and so I was probably the least stressed Fellowship, it was Part 3 at that stage, I was the least stressed Part 3 student ever because I sort of had in mind well maybe I'm not actually even going to use this Fellowship anyway. So, I didn't stress out about it at all I still tried obviously still passed the exam but I wasn't overly concerned about what the outcome was, so it was nice.

JL: Yeah wow, a different plan in mind yeah. So, Adam it sounds like you really had that calling to teaching as many teachers and great teachers do, that it's a calling and there's something that immediate reward of being able to teach someone something that was something that you really wanted to do.

AB: It fits my personality.

JL: Fits your personality, yeah okay.

So, talk to me a bit about your philosophy on teaching and education.

AB: So, if you asked me that question say 15 years ago about philosophy of teaching and education I would have thought that that was a very Public Service sort of question, looking at synergies and every other buzzword that you can possibly think of. Living in Canberra you joke a lot about Public Service speak and philosophies on things is absolutely a bit of a public service speak I was very lucky that I was able to enrol in a Master of Higher Education at ANU just after I think I finished my PhD I believe I was the very last person to graduate from that degree at ANU before they canned it. But the structure of that degree was a lot of personal reflection and investigation on teaching philosophies, and I learned a huge amount during that process and I think the book that affected my philosophy on teaching the most was a book by John Biggs and Catherine Tang called... I'm going have to look behind me now, it's in my list Teaching for Quality Learning at University.

JL: Okay.

AB: And I read that as part of one of the courses I was doing in the master of higher education, and it talked a lot about a concept called constructive alignment.

JL: Constructive alignment?

AB: So, you start with what you want the students to learn and that is at the forefront of absolutely everything you do, that drives the learning outcomes that you write for the course and that's your starting point. Then you move to assessment, and you go okay cool how do I design a piece of assessment that ensures that I'm assessing the learning outcomes that I have written to start with? Then I move back from that assessment to the teaching activities, and I think how do I design teaching activities that give students the best opportunity possible to succeed, at that assessment which is measuring whether they met the learning outcomes or not and that whilst I might have been doing that a little bit to start with, I'd really never thought of it from that perspective before.

I'm thrilled to see that the Institute has moved in that direction in the last five years or so. We would both remember back doing Part 3 exams, those horrible moments when you open an exam paper and you look at a question and go "I've never seen this before!"

JL: Yep.

AB: What is going on? How do I answer this question?

JL: Yeah, because a volunteer Fellow, who had done a great job of coming up with a great exam question but maybe has 15 or 20 year's experience and hasn't been involved in the teaching, has written this really interesting and maybe topical exam question but as students it was quite a disconnect from what we'd "learnt" and when I say learnt in air quotes because our learning was a matter of getting a copy of the textbook, and reading through it maybe going to a couple of tutorials and then turning up to an exam.

AB: So, it felt a little bit like potluck whether you would succeed in those exams or not. Whether you'd seen that particular topic, and I really give the Institute a big thumbs up for that move because I think it's had, I mean obviously the pass rates have increased enormously but I think it's actually very clearly because of the fact that the teaching is now aligned throughout all of the Fellowship and the Actuary program courses at the Institute teaches.

So, that had a really big impact on the way I approach course design and I'll talk a little bit more about that later probably, but that's the teaching philosophy, I guess. There's also an education philosophy as well and to me the key element of education is it's all about what students learn. I don't really matter I do because I can design courses that help students to learn but realistically the goal is that students learn the learning outcomes and so if my courses and my teaching are not doing that, then I'm doing something wrong. So often my goal is to get out of the way, in terms of providing opportunities for students to learn, giving them the tools they need to learn and being a resource for them to assist them in their learning, but making sure they've got the space they need to succeed in their learning it's all about students not about me.

JL: It's all about students that's really interesting, Adam, because often you do see teachers who are often called to the profession because they want to help but they also want to impart all of their wisdom and knowledge and they see themselves as kind of the head of the classroom or the head of the learning.

When you say you need to get out of the way to facilitate students learning what does that look like? How do you do that?

AB: So, I do think that teaching has a performative element sometimes, largely that performative element is about inspiring students usually. Once that part has been done that's when the teacher needs to get out of the way and give the students the opportunity to take that inspiration and turn it into things that they've actually learned and so it's about designing learning activities that are really interesting, designing activities that give the students the opportunity to get feedback on what they're doing, whatever that feedback might look like, making sure your assessment is aligned with that as well um so I guess I see the performative aspect being mostly at the inspiration point but then after that that's when I need to get out of the way.

JL: Yep, yeah and I think students learn so much more when they're doing things themselves rather than just passively listening to someone talking at them, I mean most of us feel that way whether we're students or teachers.

AB: Definitely and one way that I sort of address that issue in a big class size because it's quite difficult in a big lecture to get students active learning it's effectively what you were just talking about before so I find the student-to-student interaction is probably the most important aspect of those classes because I can't interact individually with every student in my class but if I require students to interact with each other then they're testing their learning constantly in terms of firstly, whether I can

make a coherent argument to a colleague, and secondly, whether my colleague understands that or not, it's a really strong way of bedding down some of the learning that students might be doing on their own to start with.

JL: Yeah excellent, I'm just reflecting on my own experience teaching CMP this semester where I've got 180 students and clearly, I can't do that one-to-one like you've just described you know with everyone like you have that as well. But I do break them into small groups and get them talking to each other and sometimes I think they feel more comfortable talking to each other than talking to the teacher anyway or maybe.

AB: Definitely.

JL: You know, take more risks with the questions they're asking even too so it's win-win there.

AB: Yeah, completely agree. There's challenges with doing it online as well but technology is improving, I've used breakout rooms on Zoom, for example, pretty extensively and that tends to work quite well in terms of getting that student-to-student interaction.

JL: Yeah I think it does too and thinking about some of the... you know I teach a lot of not just postgraduate but kind of more professional type you know leadership training that kind of thing I know that even if you've got a certain size group they tend not to kind of a group of people that don't know each other well, they're often reluctant to share openly but if you can get them into a small enough group they'll start to really engage with each other and that's when you start to see some of those penny drop the aha moments that you were talking about the start.

AB: That's where scaffolding is really important as well in the sense that okay you're going to put people into a small group but give them some structure in terms of okay here's a question to start with how about you all share your answer to this question and then let them develop the conversation from there because otherwise it's even with a relatively small group it's quite intimidating being put into that small group if you're not given some sort of structure already as to how the conversation should go something to do.

JL: Yeah, particularly for us as actuaries, when maybe that's not our comfort zone talking to people that we don't know.

AB: I mean it's funny that you say that I think our education programs are often quite good at catering to our strengths and I think we should probably focus a little more on our anti-strengths.

JL: Challenging some of those things and our strengths.

AB: I teach a capstone course ANU and one of the key elements of that is group work and students hate it. Absolutely hate it. Because I randomly allocate the groups as well, they're not even groups of their choice but I explained very clearly at the start of the class what the reason is for structuring the course that way and what I hope they're going to get out of the experience yeah and I've been around the block for long enough now that I can cope with slightly lower student ratings I get for putting students out of their comfort zone.

JL: Yeah, so even if they're not as happy about it you're still aligned with your teaching and education philosophy of that constructive alignment so you're setting things up so that they're meeting what you want them to learn and you're getting out of their way so that they can learn it.

AB: Absolutely.

JL: Yeah fantastic. Okay, so I know you've also spoken and written about this idea of representation across the profession, whether that's around male-female balance or broader representation around ethnicity, age and other demographic factors. We still have a male-dominated profession I mean I think it's gotten better than when we first started out, back at Macquarie University but what do you think could be done to improve that gender, and I guess other representation, across Actuarial student cohorts?

AB: I'll start that question by a disclaimer, my wife would want me to put this disclaimer in, I am aware of the irony of a middle-aged white man talking about representation, I am well aware of the irony.

JL: Yeah, I accept that. But as a teacher and a teacher, in your words has been around the block a few times. What are you noticing? What do you think we could do?

AB: So, some numbers are a good place to start because that's what we do. In the highest level of Year 12 mathematics across the country, a third of students are female, two thirds are male ANU and I think this is broadly representative of universities around Australia as well I've done some work with Leonie Tickle at Macquarie looking at their data as well, the proportion of domestic students who are female as a third.

JL: Okay.

AB: So, those numbers are actually not too bad if you compare us with other sort of mathematically dominated professions like computer science and engineering, we actually do far better than what those professions do in terms of the proportion of women in the profession. So, that's not too bad an outcome. Now in terms of improving that outcome, I always think of this from a bottom-up or a top-down approach. The bottom-up approach is, well what's happening to lead to only a third of Year 12 students being girls? I don't think that we have a huge amount of control over that as a profession that is a big societal challenge. I've done a bit of reading on the reasons behind that, I mean having a Year 8 daughter who is pretty good at mathematics means you're interested in why these sort of numbers look the way they are. There are reasons I won't go into that now, but I don't think we have a huge amount of control over that. Interestingly our international cohort is 60% women.

JL: Really 60%, so the majority of international students studying actuarial studies are female?

AB: Yep.

JL: Wow I didn't know that.

AB: So, that means that the socialisation reasons are not global I think they're to some extent they're Western rather than global, but again I don't think we necessarily have a huge amount of control over that so then we got the top-down, well how do we get women into the profession? The ones who have the capability, how do we get them into the profession? There's a lot going on in that space and I actually think the profession generally does a pretty good job in that space.

Anecdotally I have a lot of conversations with students towards the end of their degree who are thinking about their career options and a conversation I pretty much exclusively have with women and not men is "I've got two job offers, I don't know which one to take".

JL: Right.

AB: So, the impression I get in this is, not based on data, the impression I get is that employers really want to hire women and diversity more broadly as well.

JL: Two actuarial job offers?

AB: Yeah, two actuarial job offers and they don't know which one to take. My answer to them usually is "it matters less than you think it does, I understand why you feel like it matters a lot but it probably doesn't matter that much". Anyway, putting that to the side I think we're doing a reasonable job. Now looking at getting women into the degrees one thing we've focused a lot on ANU is making sure that we are visiting schools where there are a good number of women, girls who are doing well at mathematics and presenting the profession in a really positive light and the sorts of anecdotes, I just described to you now work really well in those sorts of environments explaining to girls who are really good at maths who aren't sure what they want to do with their maths, hey this is a career that you'll actually get to use your maths, you'll get to contribute to society, you'll earn good money and you'll be wanted.

JL: Yes.

AB: So, we spend quite a bit of time and even when I go to co-ed schools, I have a moment of I'm just going to speak to the girls for a moment because I think this is important.

JL: Right.

AB: You mentioned representation before I think that's really important. I confess I did run the numbers on your previous podcast guests to have a bit of a look.

JL: Okay...

AB: The representation of podcast is fantastic. Like, it's not just women versus men it's people with different coloured faces, different ages and all that stuff is really important because I know that as a lot of people they enter the profession by looking up to someone who has done it before, and they want to identify with that person. The best way for them to identify with that person is if they have the same gender if they have the same colour. So if we if we're providing examples of that in terms of that representation, that means that everyone who might come into the profession has someone they can look up to and identify with.

JL: That's so powerful I've heard that saying "you can't you be, what you can't see".

AB: Yeah.

JL: So, I guess as we become a more diverse profession and we support diversity in the profession then I guess there will be more role models that people can think, oh you look like me or sound like me or I can relate to you.

AB: There is a bit of a challenge there though, because it means that we tend to be asking our women to do a lot of this work if that makes sense.

JL: That's true I hadn't thought about it like that.

AB: I'm aware of that in university that the women we have in our department, I'm often asking them to do things with high school because I think it's important from that identification point of view, it does put quite a burden on them to be that person to be identified with both in terms of time but also I guess in terms of pressure as well, so I'm aware of that. There's a little bit of a challenge there in making sure we're not putting too much of a burden on our women or what other places of diversity, in terms of not yet putting too much of a burden on them.

JL: Yeah it's a good point Adam and I think we still have that sort of two to one male-to-female ratio across the profession and then some of those other more social burdens that you were talking about too, you know caring load and those things that often tend to fall to women, it kind of amplifies that imbalance I suppose, but yeah very interesting. I'm super interested that you've run some stats on the podcast I'd love to see that afterwards.

AB: They're me looking at your web page, I'm looking over that's my other screen it's not on there at the moment but just quickly going actually, I think the women number was about a third as well so...

JL: Representative yeah. My objective with this podcast has always been to showcase the diversity of what actuaries can do. How are we using our actuarial superpowers to make a difference in the world? And the answer is we're all doing it in different ways so yeah, I'm glad to see that diversity is coming through also in visible diversity as well.

AB: Just to share another anecdote as well, this is an example of where I think it wasn't done well. The Institute probably five to seven years ago, I think it was called 'I am an actuary' now it's basically short little videos of people describing what they do, not too dissimilar to what exists on the web page now and there was I don't know five or six of them or so and it was very clear that there was a number of videos of men talking about what they do and there was a video of two women in the same video and

that was the only video that had multiple people I think it was the only video that had women in it as well, and it really rubbed me the wrong way because it sort of it wasn't deliberate in any way, shape or form but it came across a little bit like, well for women to succeed they need to be working together they can't succeed on their own. I actually said something to the Institute about it at the time and I don't think that video is up there anymore, but it just felt like, it's easy to get it wrong. I'm sure I've got it wrong in the past as well.

JL: Yeah, good on you for calling it out Adam. Yeah, well hopefully we're making some better strides there, so okay let's talk a bit more broadly then about students at university, all students. What do you see as the most valuable skills that actuarial students can learn at university and maybe elsewhere?

AB: Technical skills don't probably matter as much as what students think they do. I know, shock horror.

JL: That's what we're all learning isn't it? Our actuarial technical skills?

AB: Largely in the foundation program, I often use an example with students I'm speaking to about this issue in terms of what employers are looking for and I use my two hands this is my technical skills these are my non-technical skills and I say you won't succeed if you're like this, if your technical skills are up here and your non-technical skills are down here that's not going to work. Bringing this down a bit is fine as long as this is coming up here.

JL: Sorry and for those listening to this on the podcast, you've got your hands, and you're sort of going technical skills versus other skills you know they're even.

AB: Having strong technical skills and really weak non-technical skills doesn't work and we attract students who think that way, who think in terms of technical skills are everything and so I guess to more directly answer your question, I feel like probably the most important thing students can learn both at University but also in their early career is to learn about themselves learn about what their strengths and weaknesses are, learn about what they really like what they really don't like. I was able to learn through my early career in industry what worked best for me as a career, if I can instill some of that in the degree as well in terms of learning about yourself, you know part of the reason for putting students in a group is you'll learn a lot about yourself through that process.

Do I have a teaching or a leadership sort of bent? Or do I prefer being sort of more of a part of the team? for example. So, that I think is very important. Learning how to learn is also probably I would say is the most important aspect as well and so part of what I do in my capstone course, is I very deliberately say to students when I'm communicating with them I'm not a horrible person for saying this to you, but I want you to go and try and work this out for yourself go and do some research, now that sounds horrible sounds like I'm ignoring you I'm not ignoring you because I want you to come back after that and tell me what you've learned and then we can work together in terms of making sure that's on the right track, but the majority of the learning you're going to do after you finish this degree is on your own, you know... you'll have resources and tools available to you but you won't necessarily have a teacher talking to you that's true and so learning how to learn and learning to be excited about learning to really want to learn constantly is vitally important.

It goes into a deeper aspect I guess of what we learn in the foundation program in that it's easy I think or probably a little too easy to succeed by learning at a very surface level. So learning how to answer exam questions, learning there's a black-or-white single answer to every question, the capstone course I know I keep mentioning this is very deliberately grey and so the students work in groups, they solve client problems, they write reports, there's not a right or a wrong answer. And so I say to students "I'm not so worried about your answer I'm more worried about the fact that you understand your answer and that you understand why it matters to the client as well".

So, whenever I'm giving a demonstration in class of some sort of modelling activity, after we've done that, I go let's change some of these assumptions and have a look at how the answer is impacted can you justify why the answer moves in the direction it does?

Or as we get to an answer, I say to students how can you be sure this answer is right what sort of tests can you do because, really the best actuaries are the ones who can do that quickly too I remember my boss at Aon, he would this is just when I started probably when I was an intern, you'd give him something and he'd tell you it was wrong right and he done no analysis on it.

JL: He just smelled that it was wrong.

AB: He knew it was wrong and I had no idea how he did it, I think I know now, but at the time I had no idea how he did it it's all about that deeply understanding the tasks that you're doing the moving parts in the modelling that you're doing and what sometimes we won't look at the answer straight away I'll say to class, what do you think would be a reasonable answer? If the answer didn't lie in this range, what would you do to check? Have you made a mistake, or have you learned something?

JL: Yeah, is there a bug in your model? Have you missed out half the data? What's gone wrong here?

AB: I always tell students that the best bugs are the really obvious ones where the model breaks completely because then you know you've made a mistake, the worst bugs are the ones you get an answer.

JL: That's true and it's such a big shift isn't it from when we are doing those you know Year 12 mathematics courses for the end of high school, there is a right and wrong answer on those maths papers but by the time that we're practising as professional actuaries there's rarely one right answer anyway. We're making, setting lots of assumptions, we're making predictions about the future and typically there is a range of correct or accurate answers, so what you're doing then with your students is helping them to make that transition from black-and-white answers to that actuarial professional approach of having more grey and that isn't always easy to do.

AB: No, it's not easy to do in education either because they're harder to mark these things because you're really trying to delve deep into "does the student understand what they're doing?"

JL: So, okay valuable skills for students to learn at university is to learn about themselves and also to learn how to learn, and to really start thinking critically about what they're doing and their processes and that that will set them up for not just a great actuarial career but hopefully for a great life around that actuarial career as well.

AB: Yeah, and I'd add to that making connections, learning how to communicate, like getting involved in student societies, getting involved in other activities that further your networks is really important. Actuarial students in general are not particularly good at that and I'm hopeless at it too, so I completely get it. Learning how to be... it's almost just learning how to be more comfortable with it. Social anxiety, it's pretty common amongst actuarial students and so just exposing yourself to opportunities to learn how to deal with that better is really important.

JL: Yeah, so much to think about beyond the technical isn't there Adam.

AB: We haven't talked about technical at all. So, Adam, it's been great to hear a bit about your journey into academia and teaching a bit about your philosophy around education and teaching as well and about making that student-centred and supporting the best learning outcomes for students so that they can learn what they need to learn.

We've also talked a bit about representation and balance across the profession and what we can do there, I think it sounds like we are doing some good things but maybe there's some more that we can do. You've also talked about the valuable skills that where all students can learn and it's not just about their technical skills it's about learning about themselves and also learning about some of those more applied practical skills to be great actuaries as well.

So, Adam, I've got one question to finish with and it's this, What is one tip that you would have for an actuarial student, let's say a first-year actuarial student, they're great with their technical skills but they want to set themselves up for great actuarial career success?

AB: Join a student society and get involved would be my biggest tip, because that'll give you the opportunity to learn some of those non-technical skills.

JL: Excellent advice Adam Butt, Associate Professor of ANU, Head of Actuarial Studies. Thank you so much for your time today. It's been absolutely wonderful hearing some of your experiences and your tips and advice for students thanks for joining us.

AB: Thanks Julia, it's been a pleasure.