



# FROM THE PLANTROOM TO THE CLASSROOM

**Willow Aliento** talks to three educators who downed their tools to lift the skills of the next generation of fridgies.

Behind every successful tradie is a trade teacher, who ensures every apprentice learns all they need to make their way in the world of HVAC&R. It is a job with enormous rewards, and not a few challenges.

In some ways, Graham Boyle, F.AIRAH, has had a career path that has brought him full circle. He is currently Portfolio Manager – Heavy Automotive and Refrigeration for South Metropolitan TAFE in Perth, having gone into teaching after a career on the tools where he reached management level with a Western Australian HVAC&R firm.

"I went from a trade qualification to a Bachelor of Education Degree, to writing curriculum, to writing a textbook, to being seconded to industry as a 'Technical writer,'" he says.

"Before I started in TAFE I was a service manager, now I am a manager again!"

Boyle was 30 when he began teaching and says at that time there were many other young lecturers in the TAFE refrigeration and air conditioning team.

"One of those lecturers is now managing director of North Regional TAFE in WA," says Boyle. "I am still here, but no longer lecturing."

Meeting former students later in their careers and seeing how far they have come is one of the things that delights Steve Smith, education relationship manager at Superior Training Centre in Sydney.

Smith was a TAFE teacher for more than 30 years, after completing his own apprenticeship, spending some years on the tools, and running his own HVAC&R business.

He says he went into teaching expecting it to be easier than being out in the field. Instead, he found that TAFE is also in some ways a 24/7 commitment.

"I didn't know everything I needed to know to teach everyone everything," he says with a laugh. "So, I spent the first six years up every night until 1am preparing for the next day before being up at 6am and doing a one-and-a-half hour motorbike ride to class.

"But once I got through that first six years, I had a handle on it."



One of Australia's most experienced educators, Graham Boyle, F.AIRAH.

## THE UPSIDES OF EDUCATING

Smith says that in the average class of 15 students, there are usually three that do exceptionally well, three that find it very challenging, and the rest are average. The three at the top, he says, keep the teacher on their toes, and often push them to go further in their own knowledge by asking difficult questions.

The students that struggle also fuel the educator's mission. And Smith says running into a student who got off to a slow start then turned into a success is still a highlight for him.

"Seeing the results of the interaction I had with them ... and seeing the result of a lot of energy pay off, is wonderful," says Smith. "It could be 10, 20 or 30 years later – but I so enjoy watching people succeed."

Overall, the relationships with students have been a huge reward.

"The kids I taught at TAFE were another family to me," he says. "I have been to weddings and christenings of former students – I have been invited into people's lives."

Four years ago, Adam Brown traded the toolbox for a role as an HVAC&R teacher at Box Hill TAFE in Melbourne. He says having a wide diversity of experiences in the industry, both in Australia and overseas, has been an asset as an educator.

In particular, it helps ensure that apprentices in his classes are gaining the diversity of knowledge they need to build a satisfying career.

"There are some apprentices in my classes who are not being trained up to the standard they should be on the job," he explains, "because all they are experiencing is installing split systems day in, day out."

Brown says his role involves a degree of career counselling as well as educating. He asks his students what kind of work they are being exposed to – whether the company has a service department, for example.

If an apprentice is not being given a wide variety of opportunities for on-the-job learning, but variety was promised to them, or if they are unhappy with the limited scope of their work, Brown supports them to look beyond that.

Brown also supports students to navigate some of the other challenges that can arise, such as workplace bullying, or where employers are failing to meet required standards for workplace safety, superannuation or payment of overtime.

"I bring up safety, their rights and responsibilities in the first year," Brown says. That includes matters such as their rights around employer payment of trade school fees once they successfully complete their first year of TAFE, and important administrative matters such as employer obligations to provide payslips.

Safety is a key part of the curriculum. That includes explaining not only how a JSA (job safety analysis) or SWMs (safe work method statements) should be correctly done, but also why they matter.

"There are so many opportunities in this trade. I tell students that if their boss wants them to work in an unsafe situation, they do not have to accept that."

## HOW STUDENTS HAVE CHANGED

According to Boyle, the age of students hitting the classroom has changed, with the emphasis on young people completing Year 12 a major factor. When he was first teaching, leaving at Year 10 to take up an apprenticeship was common.



After more than 30 years at TAFE NSW, Steve Smith is now at Superior Training Centre.

"When I was an adult apprentice, I was something of a rarity," Boyle says. "Now we would have over fifty per cent adults and most of the others are Year 12 graduates."

Brown agrees that the age of apprentices is increasing.

"In my classes I have many students who are doing second trades, such as a lot of mechanics and chippies," he says. "They often make the jump across in their late 20s or early 30s, and it's not uncommon to find people in their mid-to-late 30s or 40s in class."



Adam Brown moved to teaching four years ago, and is loving his job at Box Hill TAFE in Melbourne.

“There are a lot of mature-age students, and that helps with the dynamics of the class.”

Boyle notes there are a growing number of women coming into the classroom too, many from the resource industry, or becoming a dual trade.

“They [may] already have an electrical trade and their company encourages them – male and female – to train in refrigeration and air conditioning. These large companies often have gender equity selection policies in place.”

Although there is a misconception that trades are a pathway for those who can’t succeed at school, Boyle says the courses are academically challenging. Many students thrive, but others “continue to fail because TAFE courses have the same academic rigour as their school”.

Smith says many students lack literacy and maths skills. For a highly technical course like refrigeration and air conditioning, that results in a high failure rate. On the flip side, he is seeing more students from migrant backgrounds who bring enormous enthusiasm and dedication with them.

Attitudes have also changed. When Smith was at TAFE, students largely assumed they needed to know everything they were being taught. Before the internet and smartphones, what tradies had in their heads made them stand out. Today someone can just google something, or message a colleague.

“Some students are sitting there now thinking, ‘I don’t need to memorise this,’” says Smith.

He believes this has also changed the skills required for educators. Rather than teaching theory, it’s about teaching students how to research and how to discern between good and bad information.

Smith says the fragmentation and specialisation seen now in the industry is also causing issues in the VET sector. For example, he estimates around 70 per cent of students have only installed wall-mounted split system air conditioning units.

“The majority of employers specialise in a portion of the trade, so when we get the students come in, 95 per cent don’t have any knowledge of what you are talking about,” he says. “When we start talking about refrigeration in supermarkets and big systems in high-rise buildings, they are not interested.”

Brown says the main qualities a student needs – aside from an interest in the trade – are being comfortable with the curriculum, respectful in their approach to people, and reliability.

If an apprentice can do those three things, they are “halfway there to succeeding in the job”.

Application to the process of learning also matters. To complete the apprenticeship and gain certification, students must show the examiners competency.

Mechanical skills and aptitude are not the whole story either. Digital literacy is now crucial, and this is something Brown found most challenging personally when he became a TAFE teacher.

“I was reasonably IT illiterate when I started, but I can’t get away from IT now! I say that to students too.”

## HOW THE CURRICULUM HAS EVOLVED

Unlike some trades, for example carpentry, plumbing, plastering or boilermaking, HVAC&R is a trade where change is fast-paced and constant in terms of technology, equipment, legislation and work methods.

Brown has seen the evolution first-hand, including new technology entering the market such as energy-reclaim equipment, advances in cooling, battery technologies, energy-efficiency improvements, electrical controllers, BMS systems, inverters, new refrigerants and bulk codes for work orders.

While the technology can make the job easier – for example being able to assess a breakdown by tuning into the building BMS via a digital device such as a laptop or smartphone – apprentices still need to learn the mechanical and first-hand diagnostic approaches. Technology may not always work the way it should. Internets go down and devices can malfunction.

There is a huge amount of new information in HVAC&R, particularly around technologies and flammable refrigerants. Because of this, Brown says we may see an increase in the hours apprentices devote to education.

That may include building more face-to-face time into the apprentice learning requirements, and also utilising online learning so apprentices still get sufficient time on the jobsite.

Brown notes that having moved to online learning due to COVID-19, there are opportunities now for TAFE to keep utilising it for part of the curriculum to provide learners with self-paced, offsite educational content.

Smith says one of the challenges with the TAFE curriculum is the cumbersome process for updating it in line with advances in technology, standards or processes. As a nationally registered course, all states and territories have to agree to any changes before federal endorsement for its use in TAFE. This can result in content lagging behind.



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## MAKING THE SWAP

Boyle says there is an issue with the ageing of the TAFE teaching workforce. This is not wholly due to difficulties recruiting new teachers. Recently Boyle did recruit a young teacher for refrigeration – and he hopes more young tradies will make the shift.

“Teaching is a job where you don’t tend to wear out the body and relationships the way that working in industry can,” he says, “so without a retirement age people can hang in for longer.”

“We recruit when we need people, either through growth, promotion or retirement.”

“It is the criteria that is used for recruitment that governs the people you choose.”

Often, there is no clear career path within the training system that can take a “switched on” tradesperson to the top, Boyle says.

Boyle says RAC at WA TAFE is “fortunate” in having a relatively large team that delivers across a range of qualifications.

“When we recruit a new lecturer, we can often afford to ease them into the system and mentor them into their new career,” says Boyle. “In smaller teams they don’t always have that luxury, so it can be very stressful starting a new career as a lecturer. Not everyone is cut out for teaching. There is much to learn, and it is often hard to start from the bottom again learning a new set of skills.”

At age 49 with 27 years on the tools, Brown is still one of the younger teachers in the TAFE HVAC&R education space. This is slowly changing, he says, with Box Hill Institute in Melbourne recently adding some teachers in their 30s and early 40s to the staff.

The role does need practitioners to be seasoned, as the onsite experience is crucial to be able to deliver the learning students need. Brown says HVAC&R also needs more women in the trade, and more women teaching it.

“When I was at RMIT [doing my trade course] there was not one female student,” he says.

He has had female teachers and says his best student to date has been female. So if a woman has an interest in taking up the educator’s role, he believes they can not only succeed but thrive.

To become an effective TAFE teacher in HVAC&R, Brown says a “reasonable background” of 10 years or more on the tools is important. A teacher also needs a Certificate IV in Training and Assessment to be formally qualified.

But beyond the professional credentials, there are important personal qualities.

Brown says his life experience, including having lived and worked overseas, and working for both large and small companies is an asset.

Empathy is required, as teachers need to “gain an understanding of the student on an individual level”.



You have to like people in general, and also have the ability to say to students ‘here are the boundaries’

Brown says sharing experiences helps build that understanding and common ground.

“You can use your own experience as an encouragement for students. I tell them that the sky’s the limit, so don’t pigeonhole yourself. This trade can take you anywhere.”

Educators also need to be interested in students, while holding the line on expectations around classroom behaviour.

“You have to like people in general, and also have the ability to say to students ‘here are the boundaries,’” Brown says.

“You need to put on the academic’s hat and have the confidence to stand up in front of a class, possibly unruly at times. The saying is that 10–20 per cent of your students will create 80 per cent of your work, and there is some truth to that.”

One of his favourite things about teaching is the interaction involved.

“I was a heavy industry mechanic, so I spent a lot of time working pretty much autonomously,” he says.

Having regular hours, including knowing when the day starts and when it will end, and where exactly he will be working is also a plus. Having a family, Brown finds the synchronisation of TAFE holidays with school holidays is also advantageous.

“It is more family-friendly,” he says. “There are not the call-outs at all hours or the unpredictable overtime. There is great work-life balance.”

Brown says the administration side of teaching can feel a “bit onerous” at times, so he recognised a systematic approach was needed to keep on top of it.

Overall, Brown says he would “not be going back on the tools in a hurry.”

“I love encouraging students. What really floats my boat the most is someone who I think won’t cut the mustard. They may change employers, or their mindset, and then at final assessment they blow you away.

“It’s an awesome trade – and it’s rewarding when I see students grow, when I see them do their capstone, their final assessment (nerves aside), and they are standing there in their own power.” ■