Teesside's Alan Clements and Imperial's Jeremy Bradley find that despite

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was more than a bit apprehensive when he first heard that he would be shadowing a lecturer from a Russell Group university for a day and write up his experiences. I thought about the request for a good five seconds and agreed. I had decided to get some new experiences because you never know where they may lead.

My college is in the School of Computing at Teesside, and it raised a collective eyebrow when I told them about the invitation. "It's probably a set-up," they glumly cried. "You'll be eaten alive down South." So I thought I'd better clear things with the vice-chancellor before going ahead. He seemed reasonably receptive, but as I left, I heard him say to his PA, "Kareem, dust off Clements' PhD and make it ready. He might not be staying much longer."

I am to spend a day with Jeremy Bradley, a young lecturer, the basis of the swap being an exchange between a post-92 university and one from the Russell Group, and between someone starting their career and someone well established.

Jeremy's career has been at Imperial College through a smooth part of London. His job says, "It's the carbuncle at the end of the street." His right. The computer science department is a chunk of concrete that can best be described as 1960s brutalism. Inside, I notice they have stuck what looks like someone's ageing swimming certificates over the entrance to a lecture theatre. On closer inspection I find that they are the Nobel prizes of people who have worked at Imperial. You don't see that every day.

Jeremy is in the middle of a tutorial in his room. He is teaching matrix algebra to a small group of first-year students. He is a bit like stepping into the past, where students get to meet their tutors in groups of 20 or less. Perhaps I was wrong about teaching at Imperial.

I tell Jeremy that I am surprised by such small tutorials in an age of mass education and large class sizes. He explains that small tutorial groups are used to support key courses such as mathematics. Other tutorials use groups of 120 students or so with half a dozen lecturers or postgraduates in attendance.

One of those in the tutorial turns out to be a first-year student representative who is going to a meeting of reps. I say along. The students are remarkably mature in the way they carry out their business. More than once they suggest that students with problems approach lecturers first rather than jumping into more formal procedures. They are very supportive of the faculty, which tells me a lot about the atmosphere in the department.

Jeremy is clearly a first-class academic and he's also interested in education and teaching — he's not the type who regards students as irritants standing between him and research. I am impressed that I ask him whether he would like to apply to be an external examiner at Teesside, which would probably make him one of the country's youngest external examiners.

One of the most surprising aspects of Imperial is the homogeneity of the students. I meet a mixture of students. At Teesside, a majority of our students are locals who have left school, worked for a few years and then decided to enter higher education to get a better life. Moreover, most of Imperial's students come from relatively privileged backgrounds with less than 15 per cent from working-class homes (according to the Times Good University Guide). Jeremy introduces me to Susan Eisenbichler who is responsible for teaching support. Susan demonstrates a visual database that has been developed in house by students and computer support staff. It tells you everything you would ever want to know about students you can see, at a glance. What assignments each class is

Susan is a passionate advocate of teaching. She makes it clear that an academic coming to Imperial who is interested only in research will not be accepted. She shows me how the computing facilities students have access to. She explains that, unlike many universities, Imperial's students have access to computers that are better than those they have at home. It is nice being in a place where money doesn't appear to be a problem.

I also speak to the senior tutor, Margaret Cunningham, who is responsible for student welfare. If a student misses two tutorial sessions, they have to give an explanation. Although students at Imperial receive little personal help as students at Teesside, Imperial's students are expected to hit the ground running when they arrive. I don't see evidence of the remedial help that Teesside's students can access. Indeed, I am told that students who can't cope with the demanding workload are encouraged to register with a student advisor. The brightest and the best students are accepted at Imperial and they are carefully filtered to ensure that only those who can succeed make it through to the first year: only 20 per cent of those who apply are accepted. This shows in their minuscule dropout rate. These students are already highly motivated before they get to Imperial. Before coming here, I thought Imperial and its staff just let students develop on their own. They don't. They strive to bring out the best in their students. Students are given the opportunity to perform research in their first year and to do significant research in the second year. Final-year projects often become the subject of joint papers between student and supervisor. By the time they graduate, Imperial's students are often on a fast track to a PhD and an academic career.

Before I left Teesside, someone suggested I ask Jeremy whether it is fair that Teesside and Imperial might charge the full £3,000 when top-up fees are introduced. I didn't need to ask the question. Both institutions are filled with dedicated people doing the best job they can. Both aim to bring out the best in their students. Both perform an important role in society. The faculty at both institutions are equally proud of their students at Teesside we see people start from a low base and blossom as they progress; at Imperial, the best students become world-class scientists and engineers.

The only time I raise an eyebrow is when I try to sell the Institute of Electronics and Electrical Engineers Computer Society's International Computer Design Competition that it run. This is a major competition with a final event in Washington DC and a prize of up to $18,000 (59,500). When I ask the project tutor whether a group of Imperial's students can take part, I am told that students have little time for anything other than work directly related to their course. Discouraging students from carrying out independent work that promotes skills related to their course seems rather strange.

What have I got out of the exchange? I have met Jeremy and made a new friend. I have met Susan and seen how a person with vision and enthusiasm can mould the educational philosophy of a department and ensure that the best students are turned into awesome academics. I have thinking that a post-92 university such as Teesside does a good job, too, and gives remarkably good value for money. My department has been at the cutting edge of computer science education with the development of many new courses in computing and we have two National Teaching Fellows. But we can't be complacent. Worsening staff-student ratios and increasing bureaucracy could make it very difficult for universities such as Teesside to maintain excellence in the face of traditional universities that are now putting a lot of effort into delivering a first-class education.

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catering for a dissimilar student body, they have a common dedication to different operating systems.

On arrival at Teesside, it quickly becomes apparent that he is also very keen on books. His office is filled with bookshelves. Books on architecture, books on microprocessors, books on complexity and computability. If I thought his office was impressive, it is nothing compared with the one he has at home, which is positively bulging with books. He also writes books: ten in all and some in their fourth edition. Not wishy-washy books on esoteric software design patterns but rock-hard books on 6000 processor microcode.

My first experience of Teesside from a teaching viewpoint is the third-year architecture course: a class of 12 students who are very motivated and inquisitive. Alan has a distinctive and open lecturing style, whereby he displays detailed overhead projector slides while wandering around the general area of interest. Not for him the digitally projected PowerPoint presentation or the book-on-the-couch method of mouthing bullet points in front of an audience. The students clearly enjoy it and could probably cope with more detailed and harder material in part. Alan has already told me the range of student ability at Teesside can be very wide. He thinks the students in his current class are of sufficiently high quality that, given warning, they could cope well with exam questions that involve personal research and background reading as well as testing lectured material.

I am slightly surprised that a department that has an undergraduate student intake of 550 can sustain a third-year course of only twelve people. I find out later that Teesside is very much at the cutting edge of the Government's 50 per cent participation target. And although Alan is the only student who make it through the first year can be as high as 90 per cent. The percentage of students who complete the course can be as low as 60. The result is, I suspect, that Alan tends to see only the most motivated ones on the third year of his architecture course.

Looking at the course, it becomes clear that they just have too much appreciation of the year in industry and led by the university on their behalf. The students tell me they have only eight hours of timetabled lecture and tutorial a week, with the rest taken up with a large individual project component. A quick check of the Imperial timetable tells me that we put our third-year through 12 hours a week plus individual projects and group projects.

Teesside School of Computing runs 17agem modules, each of which seems a huge number but is only a couple more than we do. The diversity of the programme is phenomenal, though, with some very clearly directed at employment trends — everything from computer programming (BSc) to computer games arts (BA), digital music creation (BA) to web development (BSc). All told, they sustain a student body of close to 1800 undergraduates and postgraduates, who are taught by more than 100 staff (twice the number in my own department). Clearly a massive logistical operation in terms of lecture theatre space and timetabling alone.

Teesside, unfortunately, doesn't have any lecture theatres large enough to take all 550 first-years so a lot of the common-first-year-course have to be lectured twice. The average lecturer in Teesside computes a nominal student contact load of a whopping 540 hours a year. However, this is deceptive when one comes in with pre-92 universities. To start with, loads at pre-92 universities tend to quote only lecture time, not time spent on tutorials, individual and group project support, marking or postgraduate supervision. At Teesside all this is rolled into the equation, with the added bonus that as much as 50 per cent of the 540 hours can be written off against administrative duties. Alan is further excused by dint of his external teaching and promotional activities with the IEEE and his National Teaching Fellowship. Even so, his 60 hours of lecturing architecture is still double the 30 that I will lecture this year.

Teesside has strong connections with local hi-tech businesses for which it provides many future employees. Indeed, their courses are very specifically tailored to software packages that local industry is using. This is fantastic for the students as they get specific training in exactly the package that the local web design company, say, uses. On the other hand, when the web design company changes package or DreamWeb Pro goes from version 3.2 Beta to 3.7.0, it could mean a lot of retraining and course redesign.

Teesside has specialisms in, among other things, multimedia, computer graphics, animation and digital music. I am shown several vibrant student projects — one an animation by Tim Burton with music that could grace any one of his movies. Clearly, the best design with computing and technology is a key selling point for Teesside. They use this to good effect in marketing themselves, as they have a DVD of animated student portfolio as well as projecting promorning animations in the department reception.

As part of its National Teaching fellowship allows him to buy out some of his teaching in the same way that an Engineer and Physical Sciences Research Council or Royal Society research fellowship would. Clearly, in funding design with computing and technology is a key selling point for Teesside. They use this to good effect in marketing themselves, as they have a DVD of animated student portfolio as well as projecting promorning animations in the department reception.

The Teesside School of Computing is a growing institution with an eye on consolidating its strengths of multimedia, graphics and animation. I am told that as we are a producer of well-trained students in specific industry-related fields. Just like Imperial, it is full of very committed people who try incredibly hard under the burden of increasing numbers and course regulation. But whereas Teesside clearly has very industrial focus, the students are who are more than competent in using current software. Imperial has a higher maths content in its courses, requiring an A at A-Level maths. This produces students who are hopefully skilled in core problem-solving, which can be applied to the technology of today and tomorrow. Then there is the research aspect to the department of computing at Imperial. There is a much heavier emphasis on this aspect for new lecturers let us them to the impression there would be at Teesside. Career promotion at Imperial is based on the quality of research and the research funds raised as well as the quality of the teaching given. And as a result, the research-driven courses given in the third and fourth year are probably unique among computing departments. I think that if you are to be a leader in this field you will have to be very good at it. I don't think I can say the same about the same as it would be a source of disappointment if my students do not want to be an excellent lecturer. And I think that if you don't want to be an excellent lecturer, we would also look to a few to be able to pio- neer in new technology industries.

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