

Account of Professional Practice – January 2017

My APP focusses on the challenging aspects of teaching non-technical subjects to Computing Scientists, and how my practice is based on a philosophy of providing engaging activities that develop graduate attributes (UniSt - employability). Teaching Excellence Awards and Student Feedback are evidence of my successes in delivering innovative approaches in my teaching provision.

Teaching Philosophy

All my teaching at the University of Glasgow has entailed either developing and delivering new courses, or substantially revising existing ones. As a computing science academic whose expertise is in the human and social aspects of computer science, my teaching tends to be in courses that do not require a strong technical basis, and so I have the ongoing challenge in encouraging computing science students to see their relevance.

I therefore experiment with innovative and engaging ways to make the classes interesting, interactive, and the relevance of the materials understood, making extensive use of, e.g., in-class collaborative activities, short campus-based field trips, videos, presentations, design studios, ‘Dragons’ Den’ presentations, and reflective essays. I encourage students to learn from each other; doing this requires fostering a supportive climate of interaction so that students are willing to present their work to the class for critique and discussion. Peer-review activities ensure students get a range of timely feedback, and, importantly, help students reflect on the quality of their own work.

My teaching philosophy is therefore closely aligned with the graduate attributes agenda (UniSt). Embedding a range of activities within the teaching of computing science gives students the opportunity to practice transferable skills within an academic context. With a mantra of “teach less and better”, I ensure that the students are not so overwhelmed with content that they lose perspective on how the subject matter can be used, communicated, critiqued, and improved.

I am a reflective practitioner, making notes after every contact teaching session and at the end of each delivery of each course – noting how they should be improved the next time they are delivered.

Scholarship Influences

I have been inspired by research that reports on the benefits of students engaging in collaborative activities, where students explicitly learn subject matter from each other (a “Contributing Student Pedagogy” (Hamer, 2012)) and in the simultaneous development of transferable skills (Bennet, 1999). The many benefits of peer-review (e.g. development of affective, critical, self-reflection and communication skills, norm-referencing, copious and timely feedback, demystifying the marking process (Topping, 1998)) underpin my evangelistic commitment to Aropä.

GUSTTO was inspired by the work of Finlay et. al (Finlay, 2012; Faulkner, 2011), who investigated how academics can benefit by reflecting on their practices through the process of writing them down for others, and by the work of Mårtensson and Roxå (2011). It too represents a peer-assisted ‘contributing’ pedagogy, facilitating the process of academics learning from each other. The intention is that GUSTTO will provide an extensive evidence base of successful teaching practice, enabling scholarly analysis of trends and transferable activities.

Student Engagement

The Masters courses I teach are for students for whom computing science was not their undergraduate degree subject; this is a diverse student body, with many mature and overseas students. I therefore focus on activities that can harness the variety of experiences and expertise already existing in the class members, while fostering the development of transferable skills (communication, reflection, negotiation, academic verbal and written expression) that many students from other cultures tend to have not had embedded in their prior educational systems.

In the MSc Human Computer Interaction (HCI) class, I use design studios (Cemmano, 2012) as a means for students to get regular feedback on their project work, and to share ideas – thus encouraging them to build their own community of practise (Wenger, 1998) with respect to interface design. They engage in peer-review, produce weekly and end-of-semester reflective reports, and present their work to the class. Students initially complained that they felt they did not get sufficient ongoing feedback from me; I now give verbal feedback on all their weekly reports (and I no longer get that complaint). In the past two years, course evaluations show 100% satisfaction with both the course and the teaching from respondents (response rate: c. 40%). Comments include *“Made the course very interesting and left the course direction to the students.”*; *“The best module on the course due to the lecturer and content”*; *“Some more feedback from the course lecturer would be helpful. Sometimes there is only so much that our peers can help us with!”*

In the MSc Software Project Management (SPM) class, students were required to create and edit an online group wiki for sharing ideas and posing and solving problems collaboratively. As with the HCI class, students wanted more ‘formal’ feedback on their contributions to the wiki page. This response has encouraged me to look more closely at the suitability of the Contributing Student Pedagogy approach for different types of content, and to ensure an appropriate balance and timing between peer-feedback and my own feedback. For my current undergraduate class, I produce summary feedback for the whole class after each peer-review activity, highlighting common errors made. Students can then reflect on the quality of their own work in the context of this generic feedback, using what they have learned from viewing other students’ submissions. With 100% response rate, SPM course evaluations gave 85% satisfaction with the course, and 73% satisfaction with teaching.

I redesigned the Professional Skills and Issues course – typically an unpopular course, being non-technical and compulsory at both undergraduate and postgraduate level. Students reported that they did not like the previous emphasis on essays as the only form of assessment. I introduced posters and videos as new assessment items, replaced the essay exam with a multiple choice test, and increased the focus on the in-course development of professional skills throughout the two-semester course, introducing a reflective essay for the postgraduate students. Following feedback indicating students would have liked more time to discuss some of the controversial topics in class, that they (especially the postgraduate students) would like more direction and support with the assessment, and that students would like some input into the range of topics covered, I introduced a voluntary post-lecture session which provided an open forum for discussion about all aspects of this course – the content as well as the pedagogy. With 92% response rate, course evaluations gave 84% satisfaction for my teaching of this unpopular course, which itself received 57%.

Students comment most on my enthusiasm, commitment, responsiveness, and high level of organisation.

External student activity

The students chosen for the ITI3 internships are taken from our level 2 and level 3 computing science classes. I interview all applicants (17 in 2016). Since students work in pairs, I aim for level 2/3, and male/female pairs. In the interests of inclusivity (UniSt), I deliberately target those students who are not typically successful in gaining software engineering internships in the private sector; that is, those students who are not necessarily amongst our top-performers. These students benefit from a boost in self-confidence, particularly when they realise that their skills can make a real difference to the charity.

Influences

The Aropä system has a strong external profile, used by 13 universities in 2016. A total of 12,880 unique students worldwide used Aropä to write critical reviews in the past two years – strong evidence of external engagement and international impact, showcasing Glasgow University as being a leader in robust and usable educational technology. Comments from instructors include “*Thank you so very much for the service you're providing to the community through Aropä*” (Franklin, USA), “*I think it's a great system. I like the small improvements over time*” (Glasgow), “*Best of all, effective at soliciting serious reviews from students --the only system out there that works for my purposes* (Washington & Lee, USA)“, “*Very dependable and helpful system - Would hate to lose it*” (Auckland, New Zealand). Aropä was one of 14 case studies (from 53) to be chosen as a finalist for an “e-Learning Excellence Award” at the European Conference on E-Learning (Prague, 2016). All other case studies presented the results of short (typically 3yrs) projects with large teams and significant funding; Aropä was notable for being the only long-term, stable, unfunded, two-person project with significant reach over universities and subject areas.

My knowledge of the range of possible peer-review activities is extensive, and I assist many users of Aropä with assessment design – giving advice as to what might or might not work. I advise current and prospective users of peer-review within the school, university, and other universities. A typical month (November 2016) included advising and supporting two CS colleagues, six Glasgow University colleagues, and three external users, and setting up eight accounts for new users.

Through GUSTTO, I have encouraged fellow academics to share and make public their teaching practises (most of which typically remain known only to themselves and their students) – and have discovered that most people are very pleased to have an easy and efficient way to tell their story. This system has the potential to influence teaching and learning throughout the university – by encouraging teachers to reflect on their own practice, to experiment with new ideas, and to contribute to a collaborative scholarly community through the discussion forum. GUSTTO will be invaluable as tool for developing a Scholarship of Learning and Teaching culture throughout the university by making teaching activities public, and open to critique and evaluation, in the form that others can build on. The GUSTTO team is currently writing an article for publication, and, once the system is established at Glasgow, I intend to investigate whether this model could be deployed at other institutions.

Through my leadership of the Course Evaluation Policy project, I have influenced the way that both staff and students approach course evaluation. By emphasising a ‘course enhancement’ rather than ‘performance management’ approach, the evaluation data is used by the lecturing staff in a positive and forward-looking manner. The creation of documents that summarise the data as themes and provide responses to the issues raised ensure that the ‘loop’ is closed. Not only does this mean that

continuous improvement will be made, but it will lead to new increased mutual understanding and co-operation between students and staff with regards teaching quality.

I led the development of a suite of new PGT programmes in 2007; currently I am leading the restructure of our HCI curriculum in the School of CS, with the objective of devising a curriculum that clearly differentiates that HCI knowledge that all graduating students should know, from that which is optional - in the latter case, focussing on research-led teaching of our specialist areas. HCI is broad, and rapidly changing, and we need a flexible curriculum structure that can adapt to the changing research and technology environment, while still ensuring that the fundamentals are taught.

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