UK Higher Education and My Role Within It

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The ILO for this journal:

1. **Locate yourself in your discipline, your department, your University and wide national and international contexts.**
2. **Explore the relationship between research, scholarship, related professional activities and teaching and learning as relevant to your own teaching practice.**

In this journal I will be describing my understanding of UK Higher Education as well as my place within it. I will also discuss the relationship between research, professional activities and my own teaching practice.

The Higher Education Funding Council for Wales use the funds distributed by the Welsh Government for Higher Education. In [3] it is stated that higher education must be provided in every region of Wales for the benefit of local learners and employers. Further aspects that are emphasised in such policy documents [3,4] are the importance of research led teaching, sustainability of universities, equal opportunities with widened access, and the importance of employability of graduates.

The aims and vision of Cardiff University are very much in line with the above [1] with particular current emphasis on building a vibrant postgraduate research community and an increase in international impact and outreach. To attract such students to Cardiff University the immediate question arises: “What makes studying mathematics at Cardiff University special?”. The immediate answer is “nothing much”. Cardiff is a capital city which has immediate advantages as well as political ramifications with regards to other Universities in Wales but I am choosing to avoid this topic. The physical building itself is not a nice one, mathematics departments in other universities are much situated in much nicer buildings. So perhaps the immediate answer is that there is nothing that special about studying mathematics at Cardiff. Upon a bit more reflection there is one huge attraction to studying mathematics in Cardiff: our Operational Research (OR) group. Operational Research is historically difficult to define but it is a branch of applied mathematics concerned with problem solving. The OR group at Cardiff is one of the biggest groups in the United Kingdom with experts in various applied fields such as Queueing Theory, Optimisation, Game Theory and Simulation. This positions us very strongly in the research community but is also translated into our teaching. Our undergraduate degree is one of the very few in the United Kingdom which offers specific modules in OR. Another big strength in our degree is our placement program. Every year we send out a growing number of students finishing their second year to work for a year in industry. These particularities obviously address the issue of employability of graduates but also place a certain level of responsibility on myself as a lecturer. I am on the front line of delivery for a number of these skills and must ensure that they are delivered correctly.

My personal research interests are in game theory and queueing theory. These two specialities belong to the field of Operational Research which can be broadly defined as the application of mathematical sciences to solving real world problems. The Operational Research group within the Cardiff School of Mathematics is one of the leading groups in the United Kingdom with a well developed international reputation for outstanding research. As part of this group I regularly attend international conferences and publish in leading journal ensuring I stay at the forefront of

my subject area.

My own teaching responsibilities are involved in four modules:

- OR Methods
- Advanced Statistical packages
- Game Theory
- Computer Science for Mathematics

The first two courses are postgraduate courses on the taught MSc program. The last two are in development and will be delivered for the first time during the 2013/2014 academic year. The Game Theory course will be taught to our final year students. The Computer Science course comes with a fundamental philosophical shift in the interpretation of what it is to be Mathematician. By teaching this to our first years we are stating that all graduates from our School will have a minimum level of programming skills. This is not common to many universities and again offers something unique to graduates of Cardiff University's School of Mathematics. I was particularly keen to get this module running and am keen to start preparing it. It will add to the growing employability profile of our graduates and also ensure to making mathematics relevant.

I consider myself lucky to have been given teaching responsibilities that are closely related to my research activities. This ensures that I will be able to deliver state of the art teaching at the forefront of internationally renowned research.

The particular subject areas that I teach are of particular interest to employers. Indeed Operational Research is well known to be a desirable degree by employers (due to the emphasis of applicability of the mathematics learned). Furthermore it also gives graduates a high level of learnability [5]. These aspects ensure my place within the goal of UK HE with respect to employability of graduates.

I am also involved in the supervision of multiple postgraduate research students. This is an aspect of teaching that I very much enjoy and hope to continue to develop. I also regularly produce and deliver teaching materials that are available on youtube. These short videos aid in the dispersion of Cardiff University's name on an international scale and further contribute to the goal of widening access. With my mentor Professor Harper, I also deliver regular outreach activities. This is something I particularly enjoy and hope to continue as a contribution to the university and country's strategies with regards to widening access and equal opportunities, I might revisit this in Module 2...

I very much enjoy my role and feel that I am strongly placed within the international, national and university education context.

Word Count: 909

References

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[6] Telegraph 2012: Graduate jobs: Top 10 degree subjects by lifetime salary http:// www.telegraph.co.uk/education/universityeducation/9552659/Graduate-jobs-Top-10-degree-subjects-by-lifetime-salary.html

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