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# The development of information literacy skills to support a changing postgraduate research environment: an Irish experience



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## INTRODUCTION

This article begins by outlining significant changes which are taking place in the Irish university research environment. It goes on to briefly describe a project to identify postgraduate generic skills, necessary in this new research environment, which the Deputy Librarian of the National University of Ireland (NUI) Maynooth led. Following on from this, a generic skills module for postgraduates in science and engineering was designed and delivered by the science librarian and the faculty member assigned to developing a programme of generic skills for postgraduates in the sciences; this module is introduced. The article concludes with a reflection on the issues/challenges in providing generic information-literacy modules to postgraduates, in a time of a radically changing research environment in Irish universities.

## **BACKGROUND TO THE CHANGING IRISH RESEARCH ENVIRONMENT**

A move from a technology-importing, low-cost economy to a knowledge-based society with a high capacity for innovation lies at the centre of Ireland's strategy for economic development as articulated in the *National Development Plan (NDP) 2000–2006*. This strategy recognises the importance of higher education, postgraduate and post-doctoral research as a major factor in economic development.

In support of this strategy, major developments in research funding, leading to a radically changed research environment, have taken place in the last decade. Government spending on research rose from 341.8 million to 664.9 million euros per annum between 2001 and 2006<sup>1</sup>

Funding to develop the infrastructure to support higher education institutional research programmes and joint research programmes across universities and between industry and universities was provided under the Programme for Research in Third Level Institutions (PRTLII), which was established in 1998. This is in keeping with a recognition that, in a small country, increased cross-institutional and cross-sectoral co-operation is necessary.

Science Foundation Ireland (SFI) was established in 2000 to support research in biotechnology and ICT. The recognition that, in addition to investment in science, investment in arts, humanities and social sciences was necessary for economic growth led to the establishment of the Irish Research Council for the Humanities and Social Sciences in 1999. In 2001, the Irish Research Council for Science, Engineering and Technology (IRCSET) was established with a brief similar to that of IRCHSS. These two research councils have provided significant funding in the form of scholarships to doctoral students in Irish universities. The Irish University Quality Board (IUQB) recognised that increased funding was a significant factor in the rise in the number of postgraduate research students in the seven universities.<sup>2</sup>

However, it should be noted that Ireland started from a very low level of research intensity. Ireland's expenditure on research and development as a proportion of GDP is well below EU and OECD averages.<sup>3</sup> Unlike in the UK, where there is significant investment by business and industry in research, most Irish research is publicly funded and carried out in universities, with institutes

of technology engaging in applied research on a limited scale. The need for significant investment in doctoral and post-doctoral research, to underpin Ireland's role as a knowledge economy, was stressed in a number of key reports.<sup>4</sup>

## **DEVELOPMENT OF GENERIC SKILLS**

Against a background of a radically changed research environment, new models of graduate education, including new graduate school structures, are being explored and developed in order to produce and support increasing postgraduate numbers and to ensure that postgraduate education meets the needs of a changing workplace and a changing society. It is therefore not surprising that new models of postgraduate skills development are being explored and the issue of generic skills is receiving particular attention.

In 2006, Helen Fallon was seconded, for a total of forty days over a one-year period, to identify a key set of generic skills for postgraduates, through a consultation process with academic staff and postgraduate students. The key skills/attributes identified were:

- writing skills
- communication / presentation skills
- team working skills
- information literacy skills
- computer skills
- teaching / mentoring skills
- an understanding of the research environment
- an understanding of relevant research methodologies
- an understanding of research ethics
- ability to manage a research project
- personal development as a researcher.

In 2007, an academic was seconded from each of the three faculties – science and engineering; social sciences; and arts, Celtic studies and philosophy – at NUI Maynooth to work on the development of generic skills for each faculty. Part of their role is the development of generic skills programmes. Significant developments are taking place in this regard at NUI Maynooth, including the development of an information literacy module for postgraduates in science and engineering. The next section situates these changes in the context of the changing Irish university research environment.

## IMPORTANCE OF INFORMATION LITERATE RESEARCHERS

Nationally within Ireland there is heightened awareness of the need for all students to be information literate and of the value of this for the postgraduate community. A Consortium of National and Universities Libraries (CONUL) advisory committee on information literacy has been in existence since 2002, with the responsibility of promoting information literacy and sharing resources within the academic community. Many initiatives are taking place nationally and one example from NUI Maynooth is introduced here.

Information literacy is high on the library's agenda. It is detailed in the library's strategic plan and in the university's teaching and learning strategy, which feeds into the university's strategic plan. Dr Bob Lawlor, from the department of electronic engineering, and Mary Antonesa, the science and engineering librarian, worked together for a six-month period (May to October 2007) to prepare an information literacy module for postgraduate students in the faculty of science and engineering. This five-credit module uses the Australian and New Zealand Institute for Information Literacy (ANZIIL) framework, which provides six core learning outcomes, and all class work revolves around this.

This module ran for five weeks in semester one. It was delivered in a blended learning environment using a mixture of 15 contact hours and online engagement via the university's virtual learning environment, Moodle. Interest in this course has been high among both postgraduate students and their supervisors. Class size was restricted to the first 15 applicants. The sessions were delivered by the science and engineering librarian, with some input from other university staff members, such as the learning technologist, where appropriate.

At the time of writing this course was under way, so it is too early to make any conclusive comments on its merits or shortcomings. However, feedback received to date has been very positive from both those attending the course and their supervisors. The faculty of social science and the faculty of arts, Celtic studies and philosophy also expressed an interest in similar courses for their students and discussions on this will take place in 2008.

## CONCLUSION

The need for postgraduate generic skills programmes is being actively addressed by NUI

Maynooth. The library is an active partner in this exciting development. We expect to further strengthen and develop our role in this area during the coming years.

## NOTES

- 1 Higher Education Authority, *Graduate education forum – key guiding principles*, HEA, IRCHSS and IRCSET, Dublin (2006)
- 2 Irish University Quality Board, *Good practice in the organisation of PhD programmes in Irish universities*, Dublin: Irish Universities Quality Board (IUQB), undated
- 3 Organisation for Economic Co-operation and Development, *Review of higher education in Ireland*, 2004 (available at [www.heai.ie/index.cfm/page/publications/category/143/section/details/id/795](http://www.heai.ie/index.cfm/page/publications/category/143/section/details/id/795) [accessed 20 November 2007])
- 4 See L. Downey *Creating Ireland's innovation society: the next strategic step – attracting and retaining world class researchers*, Dublin: Higher Education Authority, 2003; Forfás (Ireland's national policy and advisory board for enterprise, trade, science, technology and innovation), *Building Ireland's knowledge economy: the Irish action plan for promoting investment in R&D to 2010*, Dublin: Forfás, 2004 (available at [www.iaa.ie/working\\_industry/pdf/knowledge\\_economy.pdf](http://www.iaa.ie/working_industry/pdf/knowledge_economy.pdf) [accessed 23 February 2007]); Organisation for Economic Co-operation and Development, *Review*; Irish Universities Association, 'Reform of 3rd level and creation of 4th level Ireland: securing competitive advantage in the 21st century: a framework proposal submitted by the Irish Universities Association', 2005 (unpublished); European University Association, *Review of quality assurance in Irish universities: sectoral report*, 2005 (available at [www.heai.ie/uploads/pdf/IE\\_Sectoral\\_Report\\_Final.pdf](http://www.heai.ie/uploads/pdf/IE_Sectoral_Report_Final.pdf) [accessed 20 November 2007]); Higher Education Authority, *Graduate education forum*; and Irish University Quality Board, *Good practice*.