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The Teaching-Research Relationship in Higher Education

Introduction

This paper examines higher education policy regarding the relationship between research and teaching. The initial issue dealt with is whether current policy in Irish higher education recognises a relationship between research and teaching and also the dual role of academics as teachers and researchers. This is followed by an examination of any measures put in place to manage and balance the teaching-research relationship. The way in which the relationship between research and teaching is dealt with in higher education policy in a number of other countries is then considered. Finally, the relevant literature that examines the evidence for a teaching-research relationship and that gives suggestions for good practice in developing a link between these two major aspects of academic work is reviewed.

The Irish Context - Dublin Institute of Technology

I will focus initially on the higher education institution that I work in, Dublin Institute of Technology (DIT), and will then widen the perspective to the Irish Higher Education sector in general. Several documents specific to DIT that have a significant influence on shaping policy with regard to research and teaching were studied to assess the current approach. In order to discuss the situation in DIT, it is helpful to briefly examine the structure of the Irish Higher Education system and the position that DIT occupies.

The Binary Higher Education System

The Submission from the Dublin Institute of Technology to the Organisation for Economic Cooperation and Development (OECD) Review of Higher Education in Ireland (Dublin Institute of Technology, 2004) addresses the binary division that exists in the higher education sector between institutes of technology and universities. It is noted that this division originated in the 1960's when regional technical colleges (later to become institutes of technology in 1998) were set up in locations around the country in response to a shortage of technicians. The case is made in the submission that DIT is essentially different to the seven universities and also to the other twelve institutes of

technology and that it has elements in common with both groups. DIT was established in 1978 as a result of the merging of six vocational colleges and it is pointed out that some of these colleges, and thus DIT, have '*origins in the 19th century'* (Dublin Institute of Technology, 2004: 2). The mission of DIT is defined in the document as that of an urban, publicly-funded higher education institution that provides opportunities from apprenticeship to PhD level. The similarities identified with the university sector are that DIT provides post-graduate level education, have their own degree-awarding powers (since 2001) and are members of the European Universities Association.

The point that neither the university or institute of technology category seems to be appropriate to DIT is reiterated in the Review of Higher Education in Ireland Examiners Report (Organisation for Economic Cooperation and Development, 2004 :20) which stated that DIT has a different role to the other institutes of technology on the basis of '*its age, size, academic range and location in Dublin'*. This issue has repercussions from a policy perspective because it requires clear and specific reference to DIT to be made and it can mean that DIT has to make an individual representation to decision-making bodies as its interests are often not the same as the other institutes of technology or the universities.

DIT Policy on Research and Teaching

Current DIT policy on research and on the relationship that exists between teaching and research was determined from two recent documents produced by the organisation wich will now be discussed.

1) Strategy for Research and Scholarship 2005 -2010

The DIT Strategy for Research and Scholarship 2005-2010 (Dublin Institute of Technology, 2005) identifies two main goals, one of which states that the advancement of research and scholarship is to be pursued but that it should be ensured that this improves the educational programmes provided. Thus, the link and balance between research and teaching is given a high priority and is clearly acknowledged.

The definition of research and scholarship given in the strategy document (Dublin Institute of Technology, 2005: 3) is as follows;

Any creative work undertaken on a systematic basis in order to increase

> *the stock of knowledge, including knowledge transfer, or to develop new materials useful for teaching or learning, or to add to the stock of creative works and includes applied, oriented and basic research, consultancy and experimental development.*

This is quite a broad and inclusive definition and reflects the need to encompass the wide range of academic activity and educational programmes in DIT. The strategy document goes on to state that developing an understanding of research, problem-solving and analysis improves the student learning experience. Eight strategic objectives for research and scholarship at DIT are set out and one of them is that research and scholarship should be of benefit to and should support the institute's teaching and learning mission. In addition, one of the six key metrics identified that will be used in external reviews is the number of new modules, courses and programmes that are developed as a result of research and scholarship. However, it must also be pointed out that the eighteen research and scholarship metrics listed for use in internal reviews do not include any reference to undergraduate learning and teaching activities.

Evidence of potential tension between teaching and research roles is apparent in the Human Resources section of the strategy document. It is proposed that recruitment of new academic staff should have a focus on research and scholarship. A recommendation for a balance of emphasis between performance as a teacher and as a researcher might be more appropriate as DIT academic staff are required to undertake a significant amount of teaching. Another proposal is that new members of academic staff be given a two-hour reduction in class contact in the first year so that they can develop their research and scholarship. There has also been a recent decision to make completion of the Postgraduate Certificate in Third Level Learning and Teaching within the first few years of joining DIT compulsory. Careful consideration of the demands made of new academic staff in their first years at DIT is therefore important. Changes in the number of teaching hours for existing staff with a significant research and scholarship role are anticipated. They include reductions in teaching hours of up to eight hours a week and the establishment of a number of research posts that involve no more than four hours teaching a week.

Although the need for research and scholarship to have a positive effect on learning and teaching is expressed several times in the strategy document, it is stated that the Learning and Teaching Centre need to be approached to recommend how best this relationship can be improved and measured. This author feels that it is very encouraging that the stated intention is that the Learning and Teaching Centre will be asked to contribute to this aspect of the strategy but perhaps this input could have been sought before the strategy document was completed. Also, it is of interest that the significant number of taught masters programmes that have been developed in DIT in the last number of years are not discussed in the document. The dissertations produced by students on these programmes can result in research publications and the teaching involved tends to emphasise research and scholarship and therefore some reference to these courses might have been appropriate.

2) Submission from the DIT to the OECD Review of Higher Education in Ireland

The Submission from the Dublin Institute of Technology to the OECD Review of Higher Education in Ireland (Dublin Institute of Technology, 2004) made a number of recommendations concerning teaching. It was stated that a Government Policy Framework should be established and included in the thirteen requirements listed were; training in learning and teaching methodologies for academic staff, involvement of staff in research as well as upgrading of their qualifications to support quality of learning and an emphasis on quality of teaching and of research. In relation to research policy, the DIT submission contended that academic staff in all colleges need to be involved in research and that the minimum acceptable form is that of scholarship. Scholarship was defined as studies or research carried out that support an individual's teaching. As regards the teaching-research relationship, one of five preconditions suggested for government support for research centres was coherence with teaching and learning. Also, the participation of students in research was identified as necessary to provide graduates who could contribute to an Innovation Society. The case for more autonomy in the institutes of technology was made and it was proposed that the balance between teaching and research should be decided at institutional level, within the restrictions of the budget allocated.

3) Oral Report Session from European Universities Association Review Panel

DIT was reviewed by the European Universities Association (EUA) in 2005 and, at an oral report session, the chairman of the review team, Professor Henrik Jensen, remarked that the review team noted that DIT was successfully beginning to undertake education research and that research in general was a rapidly-growing area in DIT (DIT EUA Review Steering Committee, 2005). The review team also recognised that there were high teaching load requirements for staff involved in research. The teaching-research balance was addressed when it was recommended that the drive on securing research funds be monitored carefully to ensure that teaching quality as well as research quality was high.

Therefore, current DIT policy emphasises the importance of research but recognises the importance of high quality teaching as well. The objective that research and scholarship should have a positive effect on teaching and learning is clearly stated but appropriate methods to allow this to be measured and improved have not yet been determined.

The Irish Context – In General

In 2003, Noel Dempsey, the then Minister for Education and Science, invited the OECD to undertake a review of Higher Education in Ireland to evaluate performance in this area and to make recommendations on how to meet the objectives identified. A call for submissions from interested parties was published in December 2003 and the Review of Higher Education in Ireland Examiners Report was published in September 2004 (Organisation for Economic Cooperation and Development, 2004). The submissions made from various organisations, the OECD report itself and the response to the report from groups representing academics and from the current Minister for Education and Science, Mary Hanafin, have been examined for evidence of the approach recommended to teaching and to research in Higher Education and for any recognition of a relationship between the two.

Submissions to the OECD Review of Higher Education in Ireland

Eighty eight submissions were made to the review by various individuals, organisations and government departments. The DIT submission has already been discussed. The submissions from the Higher Education Authority (HEA) and the All Ireland Society

for Higher Education (AISHE) will also be examined. The HEA has a role as intermediary between the Department of Education and Science (DES) and the universities and is responsible for overseeing policy and funding for the university sector. At present, the institutes of technology are funded directly by the DES.

The submission made by the Higher Education Authority (2004) was entitled 'Creating Ireland's Knowledge Society: Proposals for Higher Education Reform'. In it, the HEA described the binary structure of universities and institutes of technology that exists. DIT is not specifically discussed. The need to maintain this binary system was expressed on the basis that there is a continued need for differing types of education provision. However, it was proposed that funding responsibilities for the institutes of technology should be transferred from the DES to the HEA and that similar resource allocation, governance and quality assurance systems should apply to both systems. The view was expressed that this change would enable a parity of esteem to be established between the university and institute of technology sectors.

In the section dealing with learning and teaching, the HEA concentrated on the need to continuously develop and improve teaching strategies and to use effective quality assurance systems. It was also asserted that supporting excellence in teaching and learning will be a key priority and will be used as a means of determining the allocation of some funding. Examples are given from the Targeted Initiatives Programme of funding allocated to projects that identify and reward excellence in teaching (€2.3 million from 2000-3), that use technology to support learning (€2.9 million from 2001-3) and that improve student retention (€2.9 from 2001-3).

In the section on research and development, the HEA states that there is an intrinsic link between education and research but go on to assert that that does not mean that every third level institution in Ireland is entitled to a share of the basic research funding available. They identify that applied research activity, secondments and alliances with institutions that are research-intensive as options available to institutions when basic research funding is not allocated.

The AISHE is interested in promoting the enhancement of teaching and learning in Higher Education. Its submission (All Ireland Society for Higher Education, 2004) is concerned with the state and status of teaching and learning. It recognises the positive

impact of the HEA Targeted Initiatives Programme but recommends several other significant initiatives such as the establishment of teaching and learning subject networks, recognition and support for teaching excellence, more reflection and research on teaching in Higher Education and the promotion of training and professional development in teaching for academics. AISHE expresses a particular interest in the relationship between research and learning and teaching and advocates measures to integrate professional development in teaching and learning into existing PhD and post-doctoral academic training. It also asserts that interaction between teaching and learning and research could be more effective and should go beyond the introduction of new research results into taught programmes to an investigation of how a particular research area could be effectively taught or learned.

OECD Review of Higher Education in Ireland Examiners Report

The Review of Higher Education in Ireland Examiners Report (Organisation for Economic Cooperation and Development, 2004) includes the terms of reference agreed with the Irish government in the Appendix to the report. In the section there that deals with Research and Development, it is stated that research and development needs to be developed to international standards but includes the stipulation that this should be done;

> *having regard to the integral connection between research and teaching and the development of an appropriate balance between these in institutions.*
>
> (Organisation for Economic Cooperation and Development, 2004: 69)

However, there is no significant discussion of the teaching-research relationship or of the impact of changes in policy on research on this relationship in the OECD document itself. The recommendations of the examiners report include the establishment of a single funding authority responsible for the universities and institutes of technology. It was proposed that this body be called the Tertiary Education Authority. The section on research recommends that the number of PhD students be doubled by 2010. The review does not include a section dealing specifically with teaching and learning.

The only references made to teaching in higher education are in a subsection on human resource management in universities. It is suggested that the probationary period for

new staff be extended from two to five years and that in making the decision '*research performance be given equal prominence to teaching*' (Organisation for Economic Cooperation and Development, 2004: 27). Also in this subsection, the importance of staff development in all higher education institutions is emphasised as a high priority and provision of programmes on the development of teaching skills, widening participation and access and the utilisation of research findings is recommended.

Responses to the OECD Review

The Irish Federation of University Teachers (IFUT) gave their response to the OECD review in November 2004 and it is reproduced in their Annual Report 2004/5 (Irish Federation of University Teachers, 2005). It includes the observation that the report is not as comprehensive as it should have been and that it concentrates on research and does not deal with teaching to any significant extent. The point is also made that the focus is narrowed further to research in the sciences and that research in the humanities is not considered. With regard to teaching, it is asserted that there is '*no grasp of the importance of fostering and passing on a body of knowledge to future generations*' (Irish Federation of University Teachers, 2005: 7). In addition, IFUT state that the link between maintaining good quality undergraduate education and the supply of suitable postgraduate students is also not recognised in the OECD review. Lynch (2004: 8) also observed that the OECD review was very narrow in its focus and suggested that it was written '*as if we had an economy but no society in Ireland*'. In his report on issues in higher education, Skilbeck (2001), presented a broader perspective on the responsibilities of Higher Education than that of the OECD. The expectation that contributions to society will be made on an economic, social and cultural basis is expressed. The IFUT Annual Report 2004-5 also includes a copy of a letter by its president, Professor Breandán Ó Cochláin, that was published in the Irish Times, Irish Independent and Irish Examiner in August 2004. In the letter, Ó Cochláin (2004) expressed concern over the visions for the future put forward by senior figures in the universities and he voiced the opinion that the teaching and learning function of universities was '*being down-graded in an all-out rush to establish research reputations.*'

The Minister for Education and Science, Mary Hanafin, issued a press release in April 2005 summarising the response of the Irish government to the OECD report (Department of Education and Science, 2005). Among the key priorities she listed for the national strategy for higher education was improving the quality of teaching and learning. Thus, the importance of the teaching function in higher education was stated. It was also pointed out that higher education had a very important role in enhancing Ireland's research performance. In addition, the minister announced that the Higher Education Authority would become responsible for funding the institutes of technology by the end of October 2005. The Institutes of Technology Bill 2006 was then published by Minister Hanafin in May 2006. Commenting in an article written in the Irish Times when the bill was published, Jim Devine, chairman of the Council of Directors of Institutes of Technology said that he anticipated that the new arrangements would take effect in the institutes of technology from January 2007 (Flynn, 2006).

Other Documents Relating to the Teaching-Research Relationship in Higher Education in Ireland

The HEA produced a report in February 2005 that dealt with issues in relation to research infrastructure. A suggested action was that the HEA consider using research performance of an institution as one of the criteria for allocating the portion of funding in the revised block grant funding system awarded on a performance related / competitive basis (Higher Education Authority, 2005). Introduction of such a strategy would be likely to cause a prioritisation of research over teaching if care was not taken to ensure a suitable balance was maintained.

Science Foundation Ireland recognised that research participation begins at undergraduate level by establishing their UREKA (Undergraduate Research Expeience and Knowledge Award) Grants in 2005. This progressive initiative financially supports undergraduates who have completed two or three years in Higher Education to work on a research project for ten weeks over the summer in an area of research funded by SFI (SFI, 2006). This measure contributes to undergraduate education and allows academics with a significant research role to become more involved in teaching undergraduates.

The International Context

The University Challenged

In 'The University Challenged', his comprehensive review of international trends and issues of relevance to Irish universities, Skilbeck (2001: 87) comments that, even in a situation where teaching is accepted to be the main function of an academic, it is often '*embedded in a complex array of institutional functions and requirements*' and that teaching ability is not always a significant factor in career development and recognition. Skilbeck (2001) adds that research and publications often determine career progression and that strong research performance is frequently used to define the status of a university but that, on the other hand, development courses in learning and teaching and recognition of excellence in teaching are new trends. Volkwein and Carbone (cited in Skilbeck, 2001, p. 90) discuss the arguments proposed surrounding a link between teaching performance and research activity but there is no general agreement on whether there is a correlation between the two. Although Skilbeck (2001) acknowledges that there is not evidence that good teaching is always supported by research activity, he states that there is a general belief that attempts should be made at all levels to engage students in critical enquiry and that this enquiry is the basis of research. As regards tensions between teaching and research functions, a survey by Astin and Chang (cited in Skilbeck, 2001, p. 90) has identified that there are difficulties involved in achieving a balance in the teaching-research relationship.

Reviews of the Teaching-Research Relationship

A number of review documents that deal specifically with the Teaching-Research relationship have been commissioned by government departments and other bodies in the UK and in Australia. In addition, quite a number of journal articles on the synergies and conflicts between teaching and research have been written. A short summary of the findings of some of these documents follow.

The Department for Education and Skills in the UK demonstrated their interest in the link between teaching and research in Higher Education by commissioning a review of the academic evidence for a relationship (Qamar uz Zaman, 2004). In addition, a report funded by the Australian Department of Education, Training and Youth Affairs

(Zubrick, Reid and Rossiter, 2001) examined how to improve the relationship between research and teaching. The report begins with a comprehensive literature review and then goes on to examine how the linkage of teaching and research operates in three Australian universities. The universities studied were quite different from each other as regards their missions and the extent of research activity but all three were managing to accomplish an effective synergy of research and teaching. It was noted that the relationships between teaching and research were found to vary with institutional mission, academic discipline and the level of the learners and that a considerable number of academic staff were fulfilling some of their scholarly objectives by carrying out pedagogic research. The importance of ensuring that funding mechanisms for research and teaching were not separate was emphasised.

Jenkins and Zetter (2003) provide a guide aimed at UK institutions on how best to link teaching and research in departments. Their main assertions are that the connection between teaching and research, often referred to as the 'teaching/research nexus', is critically important in higher education, that effort is required to develop the link and that, because the nature of the research/teaching relationship varies with discipline, individual academic departments and schools have important roles in developing it. They concentrate on what can be done at undergraduate level as this is where developing linkages has been found to be most difficult. In reviewing research evidence, they note the usefulness of employing the term 'scholarship' instead of the terms 'teaching' and 'research'. Scholarship is identified by Boyer (cited in Jenkins and Zetter, 2003, p. 6) as being composed of four complementary forms; discovery, integration, service and teaching and this is presented as an inclusive approach that avoids viewing teaching and research as two distinct activities. Jenkins and Zetter (2003) also emphasise that institutions need to set the improvement of the teaching-research link as a mission goal and then devise strategies to achieve it. In this regard, DIT has identified such a goal in the Strategy for Research and Scholarship 2005-2010 but suitable methods to realise it are not yet well-developed. The main types of strategies outlined by Jenkins and Zetter (2003) involve making students aware of the role of research in their discipline, developing the capability of students to undertake research in their discipline and managing the experience students have of staff research.

Jenkins and Zetter (2003) also address the teaching-research relationship at the level of individual academics in departments. They state that a decision needs to be made on whether most staff will be expected to have a significant research and teaching role and point out that different teaching skills are required to teach a large group of first year undergraduates than are needed to supervise a final year dissertation. They also warn that there is evidence to show that the Research Assessment Exercise (RAE) in the UK is having the effect of driving teaching and research structurally apart. Harris (2005) stresses that academics need to look beyond research that is of significance to the RAE and continue to engage in scholarship that informs teaching.

Examples of Good Practice

Gibbs (2002) notes that while a recent development has been the development of rewards and recognition mechanisms for excellence in learning and teaching, there are very few examples of systems that recognise teachers who link research to teaching. There are also very few cases of rewards for research that benefits teaching. As examples of good practice, Gibbs (2002) mentions that Earlham College in America requires that research funding applications include a statement of the beneficial impact of the research to students and that the University of Auckland request academics to show how their research and teaching are linked when they apply for a promotion. At a department level, Ryder (2002) gives the example of a journal of undergraduate research in biology that has been developed in Chester College.

Conclusion

The examination of Irish higher education policy shows that the relationship between teaching and research is generally not recognised and most recommendations from the HEA and the OECD deal with teaching and research separately, often at the expense of teaching. The SFI UREKA scheme and the HEA Targeted Initiatives Programme are notable exceptions. DIT has emphasised the need to ensure that research has a positive impact on teaching in its Strategy for Research and Scholarship 2005-2010 but details on how best to achieve this have not been established.

Internationally, the importance of the teaching-research nexus has been acknowledged by government departments responsible for education in the UK and Australia as they have commissioned reports on this issue and there are many articles in the literature on this topic by authors from these countries, including some examples of good practice. The concentration of output from the UK and Australia in this regard may be attributable to the rigorous research assessment mechanisms that have been put in place in those countries to determine university research funding as well as the impact on teaching resources of widening participation policies.

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