

# **Report on request by the National College of Ireland for approval to submit, on a case-by-case basis, applications for registration of PhD programmes in Technology-enhanced Learning provided by its Department of Informatics.**

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## **1 Introduction**

On 9 July 2007 HETAC received an application by the National College of Ireland (NCI) for approval to submit, on a case-by-case basis, applications for registration of PhD programmes in Technology-enhanced Learning (TEL) provided by its Department of Informatics.

The application included a document entitled '*PhD Programme (Doctor of Philosophy) Request for Approval in Technology Enhanced Learning—School of Informatics—for Registration on a Case-by-case Basis (July 2007)*' along with Appendices (bound separately) and was accompanied by the NCI '*Quality Assurance Handbook—Chapter 5—Postgraduate Research Degrees*'.

A panel of assessors was assembled by HETAC to evaluate the case for approval by perusing the documentation submitted and visiting the College. Details of the panel are provided in the final section of the report.

The site visit took place between 09:00 and approximately 15:15 on 12 October 2007 at the NCI campus at Mayor Street, Dublin 1. The panel held a private meeting during the previous evening.

Assessors met and/or had discussions with the senior management team; research active academic staff; and current postgraduate research students; perused research outputs; and viewed relevant facilities.

## **2 Summary of findings**

The panel recommends that HETAC approve the National College of Ireland to submit, on a case-by-case basis, applications for registration of PhD programmes in Technology-enhanced Learning provided by its Department of Informatics subject to the following conditions:

1. The programme description should be rewritten taking into account the recommendations in the body of this report and agreed with HETAC.
2. The academic staff to be involved in the supervision and assessment of doctoral students on the PhD programme should be nominated and agreed with HETAC.
3. A suitably qualified and experienced director of the doctoral programme should be identified and appointed.
4. That the maximum number of PhD students on the register at any time should be matched to the capacity of the School.
5. The College's research performance indicators should be revised taking into account the recommendations in this report.

The main recommendations embedded in the body of the report are typeset in bold face.

## 3 Detailed findings

### 3.1 General observations

The proposal is to provide a PhD programme in Technology-enhanced Learning (TEL) that includes information-technological and social science perspectives.

The proposed PhD programme involves research and high-level teaching but the main volume of doctoral level learning is attained through individual personal research and demonstrated through a written thesis—it is not a professional doctorate programme.

The School of Informatics at NCI currently provides programmes at Bachelor's level and Master's level in related fields. The proposed PhD programme<sup>1</sup> would build upon the Master's level research degree programme (in the area of Learning and Teaching) approved by HETAC in 2005<sup>2</sup>.

The proposed PhD programme is seen by NCI as a necessary step in the continuing development of the School of Informatics not least because it would make it a more attractive workplace for research-active academic staff (existing and prospective) who wish to supervise doctoral candidates.

The new programme would also provide an alternative progression route for some NCI Master's level students. Currently, all persons who graduate as Master's level at NCI in TEL and wish to progress further, must transfer to other higher education institutions and, possibly, as a consequence pursue somewhat different topics.

The Master's level students interviewed by the panel during the site visit were supportive of the proposed programme and generally positive about their experience of supervised research at Master level at NCI.

NCI is convinced that there will be a demand for persons qualified in Technology-enhanced Learning and provided limited evidence in support of this conviction.

The School of Informatics staff expressed commitment to the formation of a high quality research environment and to the delivery of a PhD programme that is competitive in terms of international research in this field.

The NCI President and top management demonstrated their commitment to the proposed programme.

### 3.2 Is there a clear and realistic research strategy?

NCI has begun the process of developing a clear and realistic strategy for research.

In broad terms, the incipient research strategy is an appropriate one and in line with the fundamental mission of NCI as an institution committed to applied research with a strong policy orientation that would be of recognisable value to the economic and social development of the community. It is also in line with NCI's mission as a higher education institution committed to access by non-traditional and part-time students.

The majority of the staff is involved in research and publish mainly within *either* one or other of two TEL strands: the technological area or the psychological/sociological.

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<sup>1</sup> The term PhD programme is used in two senses in this document. It refers to the doctoral education process in general proposed by NCI and it refers to the individualised pathway to the doctorate—each student follows a unique research degree programme.

<sup>2</sup> One of the assessors (WJM) was a member of the HETAC panel that recommended approval at Master's level in 2005.

### ***Areas for improvement***

Within the European Higher Education Area there are different views of Technology-enhanced Learning (TEL). The NCI research strategy reflects a view of TEL that is to be found more frequently in Continental European settings than in the United Kingdom. TEL in the UK is strongly influenced by the educational community, with a robust pedagogic focus, while TEL in Continental Europe has a much more technical, applied character to it, focusing more on systems and the provision of e-learning, in company training and staff development. Nevertheless, it would be advisable for the School to aim for a greater depth of knowledge around the relevant pedagogic areas.

The notion of an interdisciplinary doctorate is not clearly articulated and may not be understood in ways which other academics/institutions might understand this concept. The competence of most of the staff seems to be connected to either one or other of the two 'strands' mentioned above and accordingly, there is less cross-disciplinary research and publishing than one might expect. This observed tendency for the research to follow two parallel strands creates a challenge for establishing a cross-disciplinary approach.

### **3.3 Is there a suitable research environment including facilities (i.e. library, access to research journals, computer facilities, laboratories etc.)?**

NCI provides pleasant, modern accommodation, with dedicated space for research students and is located in central Dublin and surrounded by a host of amenities.

Current Master's level research students reported that they had access to equipment where needed, that they were able to travel to conferences, and were well-connected (in terms of contact and liaison) with international researchers in their area. The students reported satisfaction with the space in which they were accommodated. The environment enables students to support one another.

Academic staff are supported in developing their research capacity through, for example, attendance at conferences, presenting papers and working on collaborative research projects.

The incubation centre connected with NCI may contribute to the research environment by providing training and research possibilities for future students at PhD level although these possibilities have yet to be fully investigated.

The visit to the Library and interview with the Librarian indicated that the needs of prospective doctoral students had been taken into consideration in strategic planning. The Library holdings, particularly of journals are adequate, while there is good access to electronic journals. NCI plans also to appoint an assistant librarian dedicated to the needs of post-graduate provision, including doctoral students.

The computer facilities are good.

Over the past three years a number of senior visiting researchers have worked at NCI under the Fulbright Commission programme and Walton Scholarship scheme. The presence and contribution of the visiting researchers enhance the quality of the research environment. While it might be supposed that continuity of support could be compromised by the comings and goings of the visiting researchers, discussions with students revealed that they are keen to maintain both their links with the College and its developing strands of work. Master's level students indicated that they felt that they were still able to contact those scholars who had returned home to the US.

There is evidence of NCI involvement in a number of collaborative cross-institutional national and international research projects that might help contribute to the support of the proposed PhD programme.

#### **Areas for improvement**

The partnerships referred to above appeared to be evolving rather than well established arrangements. Sustainable formalised agreements would provide a foundation for longer term research projects. .

### **3.4 Is there adequate research leadership?**

NCI has given attention to the question of research leadership.

The relatively new top management team has identified the provision of applied research degree programmes as an appropriate development for the college. The appointment of a Vice-President for Research and Graduate Studies is an important statement of intention. This leadership enhances the capacity of NCI to develop research degrees, but it is a relatively recent development and has yet to have a significant impact.

There are some academics within the School who demonstrated to the panel, through their CVs and at interviews during the site visit, competence in academic research and leadership in the TEL field.

The link with the Fulbright Programme is also helpful here but it could possibly be developed more strategically.

#### ***Area for improvement***

The panel, based on interviews with staff and having reviewed some of the academic papers made available on the day, is of the opinion that, whilst several individuals possess considerable expertise, the academic level of some of the staff research output may not as high as it should be (in the context of finding potential supervisors of PhD students), and, as described in the papers, some concepts appear not as deeply understood as one might expect. This is not surprising given the early stage of development of the School and not a necessarily an impediment to approval provided that the College takes appropriate steps.

Interviews with School staff gave the impression that they did not fully appreciate the likely impact of the planned growth in the number of PhD students. This impact has the potential to influence negatively the developing careers of career-young research staff in the School, some of whom will only just be finishing their own PhDs as the programme is rolled out.

**Enhancing academic quality will depend on career-young academic staff members being properly guided in their careers but it is not clear where the necessary supportive guidance would come from.** The Fulbright Scholars are an invaluable source of help in general, but as individuals their presence is transient and their being outside the Irish/European academic environment could be a limitation for this advisory role.

**Attendance at conferences is important but not all events are equally worthwhile. It is recommended that the College identify the events that should be prioritised.**

**In conclusion, there is a need to identify a suitably qualified experienced researcher in the TEL field to direct the PhD programme.**

### 3.5 Are there research-active staff<sup>3</sup> who can supervise research students?

The composition of the involved academic staff in terms of their formal qualifications is:

- 1 professor (responsible for the skill modules)
- 6 persons with a PhD (one of whom is a research fellow)
- 5 persons who are PhD students at different stages of completion of their PhDs.
- 4 visiting professors for the academic year 2007-08.

There are several members of staff who demonstrated to the panel that they can provide excellent research leadership for PhD students in particular TEL areas, and whose plans to build up their groups to support students are commendable.

Some of the staff have experience with PhD supervision and more with the supervision of Master's level research students. Very few have had any formal training for research supervision although two are currently receiving supervisor training via an online distance education programme.

In summary, the current research capacity of the School is very much dependant on a small number of researchers who have limited supervisory experience at this level.

#### Areas for improvement

The limited number of research active academic staff who are qualified and experienced to supervise research students is a concern. **The evidence suggests that there are, at present, four academic staff members capable of supervising research students in Technology-enhanced Learning. This may increase to six, once other academic staff members have completed doctoral degrees.** This does not include the VP for Research and Graduate Studies who has demanding responsibilities elsewhere.

This is a shallow pool if there is to be joint supervision, a system of 'mock' oral examinations and internal examination. In the longer term, as already noted, other staff will be able to contribute more extensively to the proposed programme when they complete their doctorates. The School could be in a vulnerable position while these staff progress and/or if one of the key researchers should move on.

**Considering the number of potential supervisors, the projected growth in the number of students over the coming 4-5 years is challenging and may be unsustainable.**

A more systematic approach to supervisor training should be established. It is recommended that co-supervision arrangements should be used to ensure that every new student has at least one supervisor who has supervised a PhD student to completion. Perhaps the School needs to take greater account of the demands on supervisors required for the provision of pastoral care to PhD students who are more demanding than Master's degree students owing to the greater academic challenges being faced and the higher probability of major life events occurring owing to the longer duration of the doctoral programme

NCI recognises the interdisciplinary nature of TEL. However, the small number of research supervisors involved limits the breadth of locally available academic expertise. (See also the comments about the two strands in Section 3.2). This situation is exacerbated by the School not being located in a larger academic setting where colleagues from education, philosophy, linguistics, computing, psychology and sociology could be asked to co-supervise. This is a challenge but it need not necessarily be an impediment to approval provided that (i) **students' research projects are scrutinised carefully at the outset to optimise the probability that necessary expertise is**

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<sup>3</sup> The panel accepted apologies for two potential supervisors including the Head of the Informatics School who could not be present during the site visit.

available locally and that (ii) **good use is made of expertise in other institutions, through engaging external co-supervisors to help with areas that do not fall entirely within the ambit of the College's staff.** This system already exists—the key, though, is for staff to recognise when this situation arises, and take necessary steps to engage external support in good time.

### **3.6 Is there capacity for research success?**

The greatest indicator that the School of Informatics has the capacity for research success stems from the enthusiasm of its staff—this enthusiasm is to be commended. As already implied, the PhD programme is seen as a major plank in the School's future development plans, and the continued development of the staff base will depend on its success.

The panel found that both academic staff and Master's level students are pleased with the development of their research careers, and are pursuing research activities vigorously.

#### ***Area for improvement***

However, the staff have an overly optimistic assessment of their present capacity for research success that may be bordering on the unrealistic. There was a great deal of assertion of keenness and capacity, but enthusiasm is not the same as evidence of actual ability to deliver.

Interviews with Master's level students suggest a limited knowledge of learning theories. This limited knowledge is consistent with the School's current emphasis on technology. Moreover, there is lack of evidence that the proposed PhD programme would provide a strong foundation in learning theories, and teaching and assessment research. **It is recommended that these areas be further developed to complement the existing research work.**

A large part of the entries in the lists of publications included in the application represent conference papers (See also section 3.8.1). **Accordingly, there is scope for enhancing the publication record.**

### **3.7 Has the institution established agreed institutional regulations and procedures, code of good research practice and administrative support?**

NCI has addressed these requirements but specific observations and recommendations are made in the following section.

### **3.8 On the compliance with the general requirements set out in Appendix C.**

#### **3.8.1 Research performance indicators**

Some statements, for instance about the significance of conference presentations, displayed a certain naivety about what counts as research performance. This will no doubt change as the new institutional leadership has its effect. This will, however, take time, indeed a number of years.

The acceptance levels for conference papers in this field are high and the quality thresholds are variable. However, publication of articles in high-impact peer reviewed journals is a good indicator.

Similarly, not all peer reviewed funding equally demonstrates research excellence. While European Commission funding provides many benefits for research schools not all such funding is suitable for PhD-level research.

**The School is recommended to review and rank its research performance indicators.**

### **3.8.2 Research Administration and Quality Assurance**

The panel only examined Chapter 5 of the NCI Quality Assurance Handbook which relates to postgraduate research degrees. This is in many ways an impressive document that sums up the aspirations of the college in this area of work. **However, the document neither describes how deviations from the standards are to be detected nor how practice is to be improved.** It is acknowledged that this may be detailed in other parts of the QA document not perused by the panel.

### **3.8.3 Access to research degree programmes**

**There is a lack of clarity in the NCI documentation about the qualifications for entry to the PhD programme.**

It is important for the School to recognise and appreciate that not all candidates starting research projects in a broadly based Master's programme could be facilitated to progress to PhD level within the School, and some would have to go elsewhere to pursue their doctoral studies.

Arrangements for the recognition of prior learning might be considered to widen access opportunities.

### **3.8.4 Transfer between the Master's and Doctoral Registers;**

There is a lack of clarity in the NCI documentation about the criteria for transfer from the Masters' Register to the Doctoral Register.

### **3.8.5 Other Appendix C criteria**

It is encouraging that one of the existing research groups within the School of Informatics (REALT) has an active research seminar meeting every second week.

The same group also has a publication strategy.

The basic pastoral care (student welfare) element of life at NCI seems to be satisfactory but see the comment in the penultimate paragraph of Section 3.5.

Students indicated that they were happy with the responsiveness of staff in addressing questions and issues of concern, although there appeared to be an over dependence upon one or two academic staff members for guidance and support.

#### ***Areas for improvement***

The assignment of 315 ACCS credit to the programme (p.40) is not consistent with the proposed duration of 4 years.

Based on the responses of the Master's degree students, and a brief scanning of some of their theses, there is, even at that level, an opportunity to deepen the students' theoretical insight in some areas (for example learning) relevant to TEL.

If the number of students is to be increased gradually as supervisory capacity might dictate there may be practical difficulties in providing taught modules to small numbers of students. One way to address this might be to develop a more compact scalable model focussing teaching upon key areas first, and extending the taught part as capacity increases.

The length of the proposed doctoral programme is unclear in the documentation, although the HETAC requirements are themselves clear. The structure of the programme as it is set out in the College's documentation is a concern.

The programme is designed for honours Bachelor's degree graduates or their equivalent. Interviews with staff during the site visit revealed that the following model is envisaged by the College: The duration of the programme is eight semesters and there is a skills training component in every semester. The first semester of the proposed programme contains taught modules on research

methodology and specialist studies in the general area of the programme. The second semester includes a study of the relevant literature and ends with a general examination. That semester is also used for development of a research proposal (for the PhD thesis). In the beginning of the third semester the research proposal is defended and—if successful—the student proceeds with his or her PhD research work. The students who don't wish to continue on the PhD track or whose research proposal has not been found satisfactory, may continue into a fourth semester and produce a Master's degree thesis. The PhD track students do not complete a separate Master's degree in their fourth semester, but continue directly on with a further programme of PhD thesis work ending with a *viva voce* Examination. **The way this process is described in the application for approval of the programme (page 50-52, including table 4.1 and 4.2) is inadequate and partly misleading. It should be revised before the application for approval is accepted.**

The way students are selected and registered for the PhD programme in the third semester (including the function of the general examination in this process) must be more clearly described. While, attainment of taught module learning outcomes may be necessary for a person to be able to cope with a PhD programme, it is certainly not a sufficient indicator of this ability. It seemed to the panel during the site visit that its own uncertainty on these points was not merely the result of an unclear text but also stemmed from an apparent lack of clarity in substance among the School staff. **It is recommended that the description of the programme should clearly identify the 'doctoral track', and make explicit (i) the duration of the doctoral-level learning and (ii) the process and criteria for transfer from the Master's degree Register to the Doctoral Register both of which should comply with HETAC guidelines.**

The College anticipates running the programme in full-time as well as part-time modes. However, the documentation does not explain the detailed path of progression of the part-time students nor does it specify whether the two groups of students will be taught together or separately during the first semesters.

The rationale for the proposed selection of taught modules and the associated teaching, learning and assessment methods etc. should be elaborated in the programme handbook where a consistent format should be used to present the modules.

Issues arising from collaborative activities (for example if/where there is collaboration in the design of individuals' research projects) need to be addressed.

It is suggested that either a more substantial research methods module be developed or a structured schedule of seminars be introduced to enhance the support for PhD track students in the design of their research projects. A series of seminars might be the more fruitful alternative here, provided it is used for PhD student presentations and discussions of their plans and work in progress

The required reading appears rather limited (consider, for example, the qualitative methods module) while the supplementary reading of journal articles is extensive.

It should be made clear to students that they will be required to conduct their own independent literature reviews, perhaps under the guidance of the supervisor. This review should not be restricted to a reading list however comprehensive.

Generally, the assessment (whether online or otherwise) of the taught modules needs to be reviewed. It is important to ensure that assessment methods are adequately specified and appropriate to the learning outcomes which should be explicit. At NFQ Level 9 assessment should be looking for evidence that the learner is able to critically appraise and to make decisions about research design and objectives.

It is commendable that the programme is addressing the transferable skills needs of research students and attempting to make these explicit and that a Personal Development Plan (PDP) is proposed. It might be worth considering the use of an e-portfolio as part of the PDP process. This portfolio could facilitate assessment and recognition of learning outcomes of structured activities such as

student engagement with the proposed series of seminars. The link between the PDP and the progress report forms may need further consideration. It is suggested that the College considers whether it is necessary for all taught modules to be mandatory for all students.

### **3.9 On the assessment procedures for candidates for research degrees which are fair and consistent and for the purpose of compliance with standards determined by HETAC.**

There is a lack of clarity about the documented assessment procedures for candidates for research degrees. These have been expressed in Section 3.8 and must be addressed.

### **3.10 In the implementation of procedures for access transfer and progression as determined by the Qualifications Authority under Section 8(2)(d) of the Act.**

The comment on assessment in section 3.9 has implications for access transfer and progression. These matters must be clarified and especially how the assessment criteria and procedures may affect part-time students.

## **4 Conclusions**

The panel is concerned by the limited experience and capacity of NCI academic staff simultaneously to undertake both their own research and to supervise research students. There seems to be a heavy reliance on a few staff and on general enthusiasm for the programme. This enthusiasm was shared by the Master's level students interviewed who were very positive about their research environment.

The panel remains somewhat uncertain if the group responsible for implementing the programme has a sufficiently clear idea of the amount and kind of work that the running of this programme will involve. The panel fears that NCI staff may be unrealistic in their assessment of the demands that will be entailed in setting up and rolling out this programme.

However, what would society be without incidences of enthusiasm and confidence in people who wanted to achieve something that, conservatively assessed, was judged improbable?

The panel was impressed by the seriousness of purpose of the top management team and recognises that approval at Level 10 (PhD) would be an encouraging development for NCI.

The panel is reassured by the fact that the application is for approval for registration on a case-by-case basis in the specific area of Technology Enhanced Learning with responsibility for programme delivery being located within the School of Informatics.

In conclusion, the panel recommends approval subject to the provisos noted in section 2.

## **5 The Panel**

Professor emeritus Gunnar Handal, Institute for Educational Research, University of Oslo, Norway  
Dr Jen Harvey, Head of Lifelong Learning, Dublin Institute of Technology, 14 Upper Mount St, Dublin 2

Dr Maeve Martin (Chairperson), Education Department, NUI Maynooth, Co. Kildare  
Professor John Morgan, School of Education, The University of Nottingham, NG8 1BB, UK  
Professor Josie Taylor, The Institute for Educational Technology, The Open University, Milton Keynes, UK

*In attendance* Dr Peter Cullen Higher Education and Training Awards Council.