



UNIVERSITY of LIMERICK

OLLSCOIL LUIMNIGH

Quality Review
of the
**Department of
Computer Science and Information Systems**

The University of Limerick (UL), through its membership of the Irish Universities Quality Board (IUQB), follows an established process for Quality Assurance (QA) and Quality Improvement (QI). This involves a seven-year cycle during which all Departments work to improve the quality of their programmes and services, undergo a rigorous self evaluation prior to a quality review by internationally recognised experts in the field.

The process itself has evolved as a result of the Universities Act, 1997 in which the responsibility for QA/QI was placed directly with the individual universities. The UL Quality Support Unit (QSU) web site provides an elaboration of this process and the state of progress.

The broader picture is described in the publication *A Framework for Quality in Irish Universities* which can be downloaded from the IUQB web site: <http://www.iuqb.ie/>

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1.0 Background

1.1 Legislative Framework

The University of Limerick, in common with all the universities in the Republic of Ireland, falls within the Universities Act, 1997. This Act specifies the responsibilities of universities in Ireland for Quality Improvement and Quality Assurance. Section 12 stipulates that, 'The objects of a university shall include - ... to promote the highest standards in, and quality of, teaching and research'.

Section 35 (1) of the Act further requires that each university Governing Authority 'shall...require the university to establish procedures for quality assurance aimed at improving the quality of education and related services provided by the university'. The Act provides a framework for the universities to develop their quality processes. Section 35 requires each university to review the quality of the work of all faculty, academic Departments and service (including administrative) Departments on a ten-year cycle. In particular 'The procedures shall include ... assessment by those, including students, availing of the teaching, research and other services provided by the university'.

Although each university is free to develop its own procedures in fulfilling its obligations under the Act, close co-operation has been achieved through the co-ordinating role of the Irish Universities Association Quality Committee, (IUAQC). Accordingly, the universities have developed a framework comprising a set of common principles and operating guidelines for quality improvement and quality assurance. These principles and guidelines have been integrated into each of the universities procedures, which ensure coherence through the university system, while maintaining the autonomy of each university and its individual institutional culture.

More detail is available at www.quality.ul.ie/The_Act.htm and www.iuqb.ie

1.2 The Irish Universities Quality Board

The Governing Authorities of the seven Irish universities established the Irish Universities Quality Board (IUQB) in February 2003. This board comprises representatives of the Conference of Heads of Irish Universities (CHIU) and a number of external members.

The aims of the IUQB are:

- To increase the level of inter-university cooperation in developing Quality Assurance processes
- To represent the Irish universities nationally and internationally on issues relating to quality assurance and quality improvement
- To articulate, on behalf of the Governing Authorities of the universities, the resource implications of recommendations for quality improvement.

The IUQB subsumed the roles and functions formerly carried out by the IUQSC (Irish Universities Quality Steering Committee). More detail is available at www.iuqb.ie

1.3 The Quality Review Process

The common framework adopted by the Irish universities for their Quality Assurance/Quality Improvement systems consistent with both the legislative requirement of the Universities Act 1997 and international practice comprise the following stages:

1. Preparation of a self-assessment report by the unit taking into account feedback from students and customers.
2. Quality (Peer) Review involving external experts, both nationally and internationally, who have visited the Department, met the students and studied the Self Assessment.
3. Quality Review Report, made publicly available by the Governing Authority of the university, incorporating the reactions and quality improvement plans of the Division and University.
4. Continuing improvement through implementation within the resources available to the university.

More detail is available at www.quality.ul.ie

1.4 Management of Quality in the University

The Vice President Academic and Registrar has overall responsibility for implementation of Quality Assurance/Quality Improvement policy and implementation at the University of Limerick. Implementation is carried out by the Director of Quality.

The planned schedule of Quality Review of both academic and support departments was commenced in the year 2000, with the first full cycle of units within the University being reviewed within a seven-year cycle.

Academic departments are reviewed against international standards as described in the document "A Guide to the Quality Review Process for Academic Departments", which is available on the UL website at www.quality.ul.ie .

In 2006, the university decided to implement a bespoke quality management system (QMS) and developed a suitable template with the assistance of external quality experts. This system is described in the document "Quality Management Systems – Standard Framework for Support Departments".

More detail is available at www.quality.ul.ie

2.0 The Department of Computer Science & Information Systems

Founded in 1983 as the Department of Management Systems, the Department of Computer Science and Information Systems (CSIS) (<http://www.csis.ul.ie/>) is one of the oldest departments in the University.

Nowadays, the CSIS Department is one of ten departments within the Faculty of Science and Engineering (S&E). The Faculty of S&E was established in January 2008 as part of a University wide reconfiguration process and includes the following departments:

- Architecture
- Chemical and Environmental Sciences
- Computer Science and Information Systems
- Electronic and Computer Engineering
- Life Sciences
- Manufacturing and Operations Engineering
- Materials Science and Technology
- Mathematics and Statistics
- Mechanical and Aeronautical Engineering
- Physics and Energy

The teaching and research activities of the CSIS Department focus on a wide variety of digital disciplines including but not limited to human-centred computing, music technology, software engineering, software localisation, health informatics and bio-inspired intelligent systems.

We offer a variety of undergraduate and postgraduate programmes covering the areas listed here along with undergraduate programmes in Computer Systems, and Multimedia and Computer Games Development. We also offer a long-established postgraduate programme (the Graduate Diploma in Computing) and a Structured PhD in Software Engineering.

The CSIS Department is home to a research institute namely, Lero and four research centres namely, Biocomputing and Developmental Systems (BDS), the Centre for Computational Musicology and Computer Music (CCMCM), the Interaction Design Centre (IDC) and the Localisation Research Centre (LRC). The Department of CSIS aims to implement the mission of the University and the vision of the Faculty by the excellence of its teaching and research activities, and in the relevance of its activities to industry, the economy and society in general.

CSIS Web Page - <http://www.csis.ul.ie/>

3.0 The Follow-up Process

The Quality Review process occurs on an approximately seven-year cycle at the University of Limerick. An average of five academic Departments are reviewed annually. Once the Peer Review Group report is finalised, the Department concerned immediately sets about planning its response to the issues raised therein.

The self-evaluation process is intended to be a reflective exercise in which a Department/Division should identify many of its strengths and weaknesses and develop plans to strengthen and grow as appropriate. Quite often, the Peer Review Group (PRG) will reinforce these issues and may identify areas of concern that were overlooked. In many cases, the PRG will also highlight the strengths of the Department and encourage faculty and staff to take advantage of these.

After the department and the university have been given time to respond to the issues raised; the Peer Review Group's report will be made available to the wider community through the University's web site. Normally, the report is available within the University less than four weeks after the PRG visit. Responses and plans for action are incorporated into the report and are subject to the approval of the Governing Authority Strategic Planning and Quality Assurance Committee

Presentation to the University's Governing Authority usually follows within six months of the PRG visit. The Governing Authority will publish the Peer Review report, including reactions and plans, immediately following approval.

It is expected that a review of progress in implementing recommendations and investigating issues raised would occur quarterly for the two years following the Peer Review Visit. Progress Reports are published as deemed appropriate.

Date	Action
Oct 2010	CSIS department is issued with Peer Review Group report and required to prepare reactions and plans for Quality Improvement as appropriate. The report is circulated to all members of Management Committee for comment.
Jan 2011	Reactions and plans, from all levels, incorporated into the document. Quality Improvement Action Plan developed and circulated to GA committee Strategic Planning and Quality Assurance. PRG Report with Responses and Quality Improvement Action Plan are tabled at Executive Committee meeting for discussion.
Oct 2011	PRG Report, incorporating reactions, is presented to UL Governing Authority for approval for publication.

4.0 Preliminary Comments of the Peer Review Group (PRG)

The Peer Review Group (PRG) has read the self-assessment report (SAR) of the Department of Computer Science and Computer Systems (CSIS) and met with members of the department. The PRG was impressed by the professionalism and commitment of the faculty and staff of CSIS and the Lero research institute. CSIS has handled the changes in economic fortune of the country and the changes in student course preferences in a flexible and imaginative manner. The members of the department have grappled with major staffing turmoil caused by early retirements by reassigning tasks internally in order to avoid any disturbance to the experience of the students.

CSIS has developed innovative solutions to tackle problems that have been identified by its own internal management process, and some of these solutions could possibly be deployed in other areas of the University. They include the introduction of workshops for final-year second-level students, the adoption of new techniques for the teaching of programming and the development of a specialist mathematics course to ensure that students achieve the best learning outcome.

The PRG sought the experiences of current undergraduate students and postgraduate students and these were unanimous in their praise and support of the department. The student-centric approach to teaching and learning was clearly evident from the reports of the students. In a similar manner, the views of a group of local employers of UL CSIS graduates were elicited. These representatives expressed real satisfaction with the calibre of the graduates and their flexibility and adaptability in fitting into the work environment.

The members of the PRG would like to express their appreciation of the carefully written, detailed and constructively analytical SAR. Extensive documentation in the appendices demonstrated the rigorous approach of the teaching and research staff in the department and greatly facilitated the work of the review group. The frankness and general openness of discussions were also much appreciated. Thanks are due likewise to the University leadership whose representatives were always ready to respond to queries and requests from the PRG.

5.0 *The Report of the Peer Review Group*

5.1 Mission

Commendations

The PRG commends the following:

- 5.1.1 The CSIS Department for demonstrating a clear alignment with the mission of the University.
- 5.1.2 The commitment to the student experience which was strongly confirmed by representative undergraduates, postgraduates and graduates.
- 5.1.3 The successful repositioning of programme offerings allowing the rebuilding of student numbers after numbers collapsed.

Recommendations

The PRG recommends the following:

- 5.1.4 Develop a clear strategic vision for the department.
- 5.1.5 Develop a departmental strategic plan and a set of related objectives that encompass a clear direction for the curriculum and the opportunities provided by research strengths.
- 5.1.6 Explicitly integrate research, particularly that carried out at Lero, into teaching and project work.
- 5.1.7 Develop effective relationships with central services, for example through the use of service-level agreements (SLAs).

5.2 Design and Content of Curriculum

Commendations

The PRG commends the following:

- 5.2.1 The development of new, relevant and popular undergraduate courses in Music, Media and Performance Technology and Digital Media Design.
- 5.2.2 The development of the new postgraduate programmes that are attracting good student numbers.
- 5.2.3 The evidence that work in the research centres is informing teaching.
- 5.2.4 The industrial relevance of the curriculum.
- 5.2.5 The development of Web-based student portfolios.

Recommendations

The PRG recommends the following:

- 5.2.6 Develop further the industrial-teaching linkages, through more involvement of industry people in delivering workshops, seminars and lectures.
- 5.2.7 Instigate an industrial liaison board to support curriculum development, projects and placements.
- 5.2.8 Critically examine the undergraduate and postgraduate provision where student numbers are low and consider withdrawing courses that are not recruiting well.
- 5.2.9 Rationalise module provision through a critical review.
- 5.2.10 Be cognisant of the needs of businesses by embedding more soft skills in the learning outcomes.
- 5.2.11 Introduce taught content on entrepreneurship for both taught and research postgraduates.
- 5.2.12 Consider some form of formal course accreditation, possibly ICS, BCS, IEEE, ACM.

5.3 Teaching Learning and Assessment

Commendations

The PRG commends the following:

- 5.3.1 The strong practical focus in teaching and learning.
- 5.3.2 The excellent commitment to providing students with a high-quality learning experience.
- 5.3.3 The use of external speakers and new technologies to enhance student learning.
- 5.3.4 The action taken to address retention and progression issues within the department.

Recommendations

The PRG recommends the following:

- 5.3.5 Identify and monitor key metrics, such as progression, to inform department strategy on an on-going basis.
- 5.3.6 Produce and implement an action plan to address progression and retention issues more strategically.
- 5.3.7 Develop and implement a minimum specification for the online availability of teaching materials for all modules.
- 5.3.8 Address external examiner recommendations in a more systematic and consistent way.

5.4 Faculty and Support Staff

Commendations

The PRG commends the following:

- 5.4.1 The effective delivery of programmes by CSIS faculty despite a lack of senior faculty and a heavy teaching workload.
- 5.4.2 Excellent initiative and team spirit evident in innovations such as Easter workshops for prospective students.
- 5.4.3 Proactive leadership in developing new courses to combat falling student numbers and in providing excellent facilities and equipment.

Recommendations

The PRG recommends the following:

- 5.4.4 Address at University level the current serious imbalance in seniority of teaching faculty in CSIS so that the ratio of different teaching grades would approach a university or national norm.
- 5.4.5 Take active steps at University level to ensure that departments understand the potential benefits of the new workload model and use it effectively.
- 5.4.6 Develop a well-defined integrated approach to the CSIS/Lero interface in respect of teaching and research functions.
- 5.4.7 Implement a departmental structure in CSIS, such as Deputy HoD and Cognate Group leaders (as is the case in some other UL departments) as well as other department management strategies, to reduce the load on the HoD, increase the opportunity for strategic leadership and provide for succession planning.
- 5.4.8 Explore at University level the possibility of a mentoring system for HoDs in conjunction with other Irish or foreign universities to provide a two-way flow of experience and ideas.

5.5 Facilities and Learning Resources

Commendations

The PRG commends the following:

- 5.5.1 The excellent facilities for students in the CSIS building.
- 5.5.2 The well-equipped student labs which are open up to 20 hours a day.

Recommendations

The PRG recommends the following:

- 5.5.3 Develop a process to ensure repairs to department facilities are addressed in a timely manner.
- 5.5.4 Develop and implement an explicit plan for managing equipment depreciation and renewal.

5.6 Student Guidance and Support

Commendations

The PRG commends the following:

- 5.6.1 The University student support services which are extremely effective and accessible.
- 5.6.2 The ICT Learning Centre.
- 5.6.3 The peer learning support initiative.

Recommendations

The PRG recommends the following:

- 5.6.4 Put in place stable long-term funding to assure the future of the ICT Learning Centre.
- 5.6.5 Introduce a more formalised, consistent student advisor programme that encourages the use of support services by students in need.

5.7 Research Activity

Commendations

The PRG commends the following:

- 5.7.1 The impressive achievements of the CSIS research centres and the Lero research institute.
- 5.7.2 The number of PhD students associated with the research institute and centres.
- 5.7.3 The technology transfer and exchange with industry and other community partners.

Recommendations

The PRG recommends the following:

- 5.7.4 Develop a clear research strategy encompassing both the centres and the institute that aligns with University objectives, the strengths of faculty and the national and international environment.
- 5.7.5 Establish a research committee that involves all stakeholders in research (faculty, staff, research students, Lero and research fellows) and considers the wider remit of research within CSIS.
- 5.7.6 Encourage further integration of the research student population through academic and social events that cross CSIS and Lero.
- 5.7.7 Develop technology transfer activities across the whole of CSIS, making use of the dedicated Lero faculty and staff and facilities for this area.
- 5.7.8 Develop research leadership in key areas through the appointment of professors who are able and willing to contribute to the development of curriculum, pedagogy and technology transfer as well as research.
- 5.7.9 Address at University level issues concerning five-year contracts for junior lecturers and national requirements for PhD supervision.
- 5.7.10 Explore interdisciplinary research further.

5.8 Quality Management

Commendations

The PRG commends the following:

- 5.8.1 The identification of a set of quality indicators emerging from the SAR.
- 5.8.2 The bridging framework to facilitate students' transition from post-primary education to tertiary education life in CSIS.
- 5.8.3 The Easter workshops designed to ensure that potential students understand the nature of the content covered in CSIS programmes.
- 5.8.4 The effective engagement with maths providers to align service teaching more closely with CSIS needs.

Recommendations

The PRG recommends the following:

- 5.8.5 Establish a quality management role, such as Deputy HoD, to put this important function on a formal footing.
- 5.8.6 Make systematic use of a comprehensive suite of performance indicators to measure effectiveness and inform decision making.
- 5.8.7 Use surveys and feedback to better evaluate the impact of quality improvement initiatives.
- 5.8.8 Develop a management structure that better integrates CSIS and Lero and includes shared objectives and outcomes.
- 5.8.9 Implement a departmental structure that enables effective delegation by the CSIS HoD.
- 5.8.10 Use performance development and review as a key improvement mechanism and career progression tool.
- 5.8.11 Participate in national and international peer networks to facilitate benchmarking and share best practice.

5.9 Quality Improvement Plan

Commendations

The PRG commends the following:

- 5.9.1 The extensive list of improvement initiatives identified by the department in the SAR.

Recommendations

The PRG recommends the following:

- 5.9.2 Build an internal management structure to distribute responsibility for various functions amongst existing staff.
- 5.9.3 Formally establish Quality Management as a departmental function.
- 5.9.4 Establish a clear departmental financial plan.
- 5.9.5 Ensure that staffing plans are forward-looking to ensure that course modules can be catered for in the case of early termination of contracts or illness.
- 5.9.6 The University should consider ways of taking greater advantage of CSIS professional expertise in MIS, and find ways of applying that expertise in the design and deployment of the University's central MIS, in order to ensure that faculty, staff and students can optimise their work
- 5.9.7 Explore the possibility of the University subscribing to the national postgraduate application system.

Appendices

A Membership of the Peer Review Group:

Dr David Benyon	Head of the HCI group, Napier University, Scotland.
Dr Sue Black	Head of Department, Department of Information and Software Systems, University of Westminster
Dr Bill Harvey	Director, QAA Scotland
Mr Michael Nowlan	IT Consultant Formerly, Director of IS. Trinity College, Dublin
Ms Ailish O'Farrell	Recording Secretary, Technical Editor
Mr Colm O hEocha	Independent Consultant, Agile Innovation, Galway.
Mr Frank Turpin	IT and Education consultant, formerly Intel Ireland.

B Membership of the CSIS Quality Team:

Dr. Jim Buckley	Lecturer
Ms. Annette McElligott	Head of Department
Dr. Norah Power	Lecturer
Dr. Conor Ryan	Senior Lecturer
Mr. Dermot Shinnars-Kennedy	Lecturer

C Contact

The Peer Review Group were given the opportunity over three days to talk to the CSIS Quality Team both formally and informally. Meetings with staff, postgraduate & undergraduate students and others were scheduled as group sessions. The Review Group was given the opportunity to meet all staff during a visit to the facilities of the department and this was most helpful.

All the meetings provided extremely useful additional information to support the SAR.