Quality Assurance / Quality Improvement Programme for Academic Units

2002-2003

School Quality Improvement Plan

School of Computing

19 August 2003

Contents

1 Introduction

1.1 Background and context

1.1.1 Quality Self-Assessment Report.

The School of Computing at Dublin City University has undertaken a detailed analysis of the operation of the School in education and learning, research and other university and community activities. The whole School community of staff, students and other stakeholders within and outside DCU has been involved and consulted in the process. This process resulted in a Self-Assessment report, produced in February 2003, which was reviewed, together with the activities in the School, by a Peer Review Group in March 2003. The findings of the Peer Review Group were published in May 2003.

1.1.2 Peer Review Group Report.

The Peer Review Group (PRG) report was in general favourable to the School. The group spent two days in the School examining the operation of the School and interviewing a cross-section of staff, students, graduates and other people with an interest. They found the self-assessment report useful and informative. They found that the School compares well against national norms, that teaching is particularly strong, and that there is evidence of a substantial and growing research profile.

The School self-assessment report had identified a number of areas where improvement could be made in the operation of the School. The PRG concurred with many of these, and identified specific areas of concern that should be addressed as a matter of priority. These points were summarised in a set of recommendations at the end of the PRG report, and are addressed in section 2 of this document.

1.2 Quality Implementation Committee.

This Quality Implementation Plan has been drawn up by a committee comprising:
>Mr. Howard Duncan, lecturer (chair)
>Prof. Alan Smeaton, dean of faculty
>Prof. Joseph Morris, head of school
>Prof. Tony Moynihan, professor
>Dr. David Sinclair, senior lecturer
>Mr. Renaat Verbruggen, lecturer
>Dr. Cathal Gurrin, post-doc
>Ms. Mary Hearne, research student
>Mr. Peter McGorman, technical support.

1.3 PRG recommendations.

The PRG recommendations are divided under five headings: Organisation and management, Programmes and instruction, Scholarship and Research, Social and Community Services and Staffing, Accommodation, & Resources. Within each of these headings, recommendations are prioritised into Priorities 1, 2 and 3, and identified as requiring action by the School, the Faculty or the University, or some combination of those.

2 Recommendations for improvements

The recommendations made by the PRG are given, in their original form, below. The PRG qualified each recommendation by an indication of priority as follows:

- P1: A recommendation which is important *and* requires urgent action.
- P2: A recommendation which is important, but can (or perhaps must) be addressed on a more extended timescale.
- P3: A recommendation which merits serious consideration but which is not considered to be critical to the quality of the ongoing activities in the School.

In addition, the PRG attempted to indicate the level(s) of the University where action is required:

- S: School of Computer Applications
- F: Faculty of Engineering and Computing (when constituted)
- U: University Executive/Senior Management

Where considered appropriate, action at multiple levels is recommended: this indicates a need for co-ordinated, complementary, actions at *all* the indicated levels.

2.1 Recommendation concerning shortcomings in services, procedures and facilities which are <u>within</u> the control of the Unit

2.1.1 Recommendations already implemented

Organisation and management

1 P2-S: Complete re-organisation of structures within School. Schedule regular School meetings. Clarify research support and development roles.

Action taken:

School meetings are now held once a month during semester.

The Teaching Committee has been re-formed and meets regularly.

A new structure for managing research has been approved by the School Meeting, and implemented.

Programmes and instruction

2 P2-S: Clearly "brand" the two BSc in CA streams for the benefit of students and employers, paying special attention to the need to avoid any perception of disparity in academic quality.

Action taken:

The structures of the Software Engineering and Information Systems streams have been comprehensively reviewed, and they have been redefined to make them more distinct from each other and more comprehensible to the students.

The Computer Science stream has been discontinued as it was found to be indistinguishable in practice from the Software Engineering stream.

Additional resources (including additional optional modules) have been allocated to the Information Systems Stream to make it more distinct and improve the content for the students.

The School has employed a marketing executive for one year to develop and execute a marketing campaign to promote the degree in schools. While the marketing person is in place, there is as yet no funding in place for advertising and printed material costs.

3 P3-SF: Develop an integrated, strategic, approach to the overall module and programme portfolio, both undergraduate and postgraduate.

Action taken:

The School has undertaken a large exercise to rationalise its portfolio of modules at both undergraduate and postgraduate level. The number of taught modules is now substantially reduced thanks to the elimination of low-demand modules and substantial sharing of modules across programmes. It is now School policy that any new programme must draw significantly from the pool of existing modules, and any additions to the pool will need to justified in academic and resource terms.

The School has closed or suspended programmes that do not pay their way; in the past year we have decided to take no input to any of the following programmes: (i) MSc in Computer Applications; (ii) BSc in Computer Applications (Evening); (iii) BSc in Applied Computational Linguistics; (iv) MSc in e-Commerce (Corporate); (v) the Computing Science stream in the BSc in Computer Applications. In their place, we have developed and vigorously marketed new postgraduate programmes, to the extent that the number of applications for taught MSc's (about 320) significantly exceeds the number of CAO first preferences for our undergraduate programmes (about 250). As a result our SCRs are projected to increase next year.

Scholarship and Research

4 P2-SF: Provide formal research skills training for new postgraduate research students.

Action taken:

Responsibility for providing a supportive framework and a helpful environment for research students and managing their progress within the School is now a dedicated administrative task for a member of academic staff. The duties of this member of staff include training students in research skills. The School is aware of the existence of the University working group which is examining the inclusion of taught modules and research skills modules as part of PhD programmes throughout the University.

Staffing, Accommodation, & Resources

5 P2-S: Adhere to hardware/software refresh schedules.

Action taken:

Hardware and software renewal is now on target, thanks to new funding made available for the purpose from the Higher Education Authority.

2.1.2 Recommendations to be implemented within one year

Organisation and management

1 P2-SF: Prepare written strategic plans at both School and Faculty levels. Ensure that this is effectively communicated among all staff. Monitor and update on a rolling, annual basis.

Proposed action:

The School has been developing a comprehensive strategy over the past year or so through key policy decisions discussed and agreed at School meetings. Most significant among these has been the decision to rationalise our teaching portfolio (see above), to incentivise research activity among academic staff, to be a strong player in winning research funds, to develop our taught postgraduate programmes partly as a compensation for reduced undergraduate intake, to seek new sources of undergraduate students, to increase our number of research students, to encourage linkage with other schools in the University, and to develop teaching and research partnerships with industry. These decisions, and their underlying guiding principles, will be codified in a single document, with additional strategic elements still to be decided.

Strategy at Faculty level awaits the completion of the faculty re-structuring.

Programmes and instruction

2 P1-S: Review the operation of the GD/IT programme.

Proposed action:

This recommendation arises out of a number of administrative problems in 2002, which were drawn to the attention of the PRG by a group of students on the programme. The PRG drew attention to a failure to give the students a suitable induction to the course and to DCU. A successful induction has operated in previous years, and the question will be addressed by the Programme Board for the 2003 intake. The Programme Board will also ensure that regular meetings take place, at which class representatives will have an opportunity to raise issues of concern. In addition, the School intends to make a dedicated lab available for this programme.

3 P2-S: Critically review future of ACL programme.

Proposed action:

CAO applications for the programme have fallen below a sustainable level this year. Consequently the School of Computing and SALIS have decided jointly that there will be no intake into the first year of the programme in 2003. We believe that the best opportunities for taught programmes in computational linguistics most likely lie in post-graduate rather than undergraduate courses and the two schools are actively proceeding in this direction. An MSc to

replace the BSc in computational linguistics may be ready for a first intake in September 2004.

4 P2-SF: Investigate opportunities for flexible, online, distance based provision; explore possible synergies with Oscail.

Proposed action:

At present almost all of the courses delivered by the School are 'web-enhanced', i.e. our courses are supported by on-line provision of lecture notes, exercises, model answers, electronic submission of exercises, and on-line interaction between students and tutors. Indeed the School is one of the most advanced in the University in its use of web-based technology. Fully on-line delivery is an expensive delivery mode that needs substantial student numbers and new costing models; the School is well-positioned for on-line delivery when a University framework and appropriate resources are in place. In the meantime, we are happy to discuss sharing our know-how with Oscail.

Flexible access to course material is particularly important for the part-time BSc in Computer Applications, which is the subject of a re-development exercise at the moment.

5 P2-SFU: Enhance systems for gaining regular feedback on the student experience in all programmes.

Proposed action:

A number of mechanisms are in place to allow students to make their views and concerns know. These include student participation in the Programme Boards, the Surveys of Student Opinion undertaken by the Registry and the personal tutor system.

At the level of individual modules, academic staff are at present responsible for getting their own feedback from students in a suitable form, and acting on it as they see fit. They are required to report that they have carried this out. The School intends to review these arrangements so that the system is more transparent, and it is easier to ensure that action is taken when feedback identifies a weakness.

Scholarship and Research

6 P1-S: Focus research publication on peer-reviewed journals and high quality peer-reviewed conferences. Promote early parallel dissemination through open e-print archives (in collaboration with Library). Incentivise these policies (e.g., via local funding supports and the workload allocation scheme).

Proposed action:

The School has embarked on a vigorous programme to enhance its research profile, and the results are already evident. For example, since the visit of the PRG the School has secured four Basic Research grants from Enterprise Ireland and six research scholarships from IRCSET (Irish Research Council for Science Engineering and Technology) – in each case this is more than any other school in the University and more than any other computing school nationally. The School is operating new policies that incentivise staff to improve their research output, including publishing in peer-reviewed journals

and high-quality conferences. Additionally, we will install a mechanism whereby the School will collect links to online copies of our publications, subject to copyright considerations, to make them accessible on the web.

7   P1-SFU: Introduce dedicated administrative support for preparation of external research proposals.

Proposed action:

The School has established a support system for academics writing research proposals through talks on "grantmanship", tips from previously successful grant winners, and a buddy system for critically reviewing each proposal. This is proving successful (see above). The continued absence of a school manager leaves a shortfall in administrative support that should be addressed. The School is aware of the additional services provided by the Office of the Vice-President for Research, and will make use of these.

Social and Community Services

8   P1-SF: Develop more flexible access provision to better facilitate and support students from disadvantaged backgrounds. Explore possible collaboration on this issue with Oscail.

Proposed action:

The School has long participated in the North Dublin Access programme, and will continue to do so. It has in addition developed an access programme with Colaiste Ide which is just now coming on stream. Arrangements will be made, possibly through the personal tutor system, for more active support of students entering the School through the Access programme. The CA Evening degree caters for students who come mainly from non-traditional sources and who are unable to take up full-time study. This programme is being re-designed at present and in its new version it will seek to increase flexible access.

P2-SFU: Make a co-ordinated effort to develop and recognise social and community service. Reflect this in strategic plan(s).

Proposed action:

The School will make provision in its strategic plan to recognise contributions by staff to social and community service.

Staffing, Accommodation, & Resources

9   P2-S: Review the adequacy of the complement of the technical support team to ensure that it is not over-extended.

Proposed action:

The Head of School and the technical support team have formulated a plan to ensure adequate technical support at a level of staffing that is commensurate with the resources brought in by the School. The plan has been submitted to the HR (July 1st 2003) and a response is awaited.

10 P2-SF: In the context of strategic planning, develop concrete initiatives and measurable goals to address gender imbalance.

Proposed action:

Male academic staff in the School greatly outnumber females, but it is not easy to remedy this to any great extent in the short-term. This is partly because academic posts in the School are currently frozen, and partly because we attract much greater numbers of male applicants when lectureships are advertised. At 15% female academics, the School is not out of line with other computing schools and with the proportions of females graduating with research degrees in computing. The School is performing better with respect to attracting female research students: currently about 20 of our 70 research students are female. Of the six female staff, one is an Associate Professor and another is a Senior lecturer, but of the four most junior academics three are female. The School will follow a policy of encouraging and supporting female staff who apply for promotion within the procedures laid down by the University and will work with the University's Equality Office towards this goal.

2.2 Recommendations concerning shortcoming in services, procedures and facilities which are outside the control of the Unit

2.2.1 Recommendations to be implemented within one year

Organisation and management

1 P1-U: Expedite/complete the Faculty re-structuring.

Proposed action:

This action is dependent on the appointment of an Executive Dean for the new Faculty, and is urgently awaited by the School.

2 P2-SFU: Critically review programme board system.

Proposed action:

The Head of School participated in a University committee on management of academic programmes, one of whose recommendations was a major overhaul of the system of programme boards. However, Academic Council has put off implementing the recommendation pending the appointment of a Vice-President for Learning Innovation. The School looks forward to progressing this through the new VP.

Staffing, Accommodation, & Resources

3 P3-SFU: Review current out-of-hours policy with a view to making it more researcher and student friendly.

Proposed action:

The School supports 24/7 access but recognises that provision of this is constrained by availability of security and maintenance staff in the University.

2.2.2 Recommendations to be implemented within five years

Staffing, Accommodation, & Resources

1   **P2-SFU: Explore all feasible means, institutionally and nationally, of improving the student-staff ratio to reflect relevant international norms.**

    Proposed action:

    The staff/student ratio is grossly out of line with international norms and results in high marking & tutoring loads on staff. We believe strongly that we are unreasonably disadvantaged within the faculty by having a low SCR multiplier in comparison with our fellow schools (0.65 for Computing in comparison with 0.8 for both Electronic & Mechanical Engineering). It is anomalous that the School gets less resources when in many cases it offers courses entirely comparable to those in our fellow schools. We ask that this anomaly be addressed urgently.

2.2.3 Recommendations which will not be implemented

Staffing, Accommodation, & Resources

1   **P3-SFU: Support all staff in planning personal development. Articulate explicit career pathways for academic staff specialising in teaching.**

    Reason for not implementing:

    Staff are supported on a personal basis by the Head of School in planning and managing their careers. However, there is no framework within the University for it. Action on this recommendation requires a University policy on staff appraisal.

2.3   Recommendations concerning inadequate staffing, facilities which require capital investment

2.3.1 Recommendations to be implemented within one year

Staffing, Accommodation, & Resources

1   **P1-SFU: Address the serious shortfall in administrative staffing as a matter of urgency. This minimally requires the appointment of a senior administrator plus a second full time secretary. This is imperative to avoid dissipating the energies of the Head of School in administrative tasks to the detriment of the strategic drive that is essential to the development of the School.**

    Proposed action:

    It is a major requirement for the School that this issue be addressed by the University.

2   **P3-S: Provide enhanced facilities for informal networking among staff and postgraduate research students.**

Proposed action:

The School considers this to be an important issue for staff and research student development, primarily to encourage the exchange of ideas and collaborative working. As a matter of urgency it is seeking to utilise the space in L239 and L240 for social contact, by installing social furniture and group interaction space, and extending the restricted access area on the second floor to include L239 and L240. The current use of L240 as a University classroom is inappropriate. It is difficult to access for anyone except School of Computing Staff and research students, and adjacent areas both horizontally and vertically are dedicated to School of Computing staff and postgraduates.

3 Prioritised resource requirements

A request for these resources has already been submitted.

1. (2.1.1 – 2) Branding of streams in the CA degree. As recommended by the PRG, the CA degree structure has been reviewed and the three stream reduced to two, Information Systems and Software Engineering, each with a distinctive character. These streams while retaining a common are entry and a common first year are much more distinct in their final three years than heretofore. It is now necessary to promote awareness of this new structure in the schools and in industry. For this purpose we need a budget to support a marketing effort, particularly in the period prior to the date for students to make decisions on their CAO applications. **Cost €15,000**.

2. (2.1.2 – 4) Improvement of the facilities, already being developed, for flexible, on-line delivery of courses. These facilities are particularly important for the Part-time BSc in Computer Applications, which is the subject of a re-development exercise at the moment. There are a number of products available on the market that assist in delivering material on-line, and work has been done in-house on developing more suitable on-line delivery and assessment methods. What is now needed is an evaluation of the most suitable tools for the School, and a project to integrate the tools available, and extend them from the courses where they are being used successfully to other courses in the programme. This is a suitable project for development by an intern or a research student. **Estimated cost €15,000**.

3. (2.3.1 – 2) Improving facilities in School Social Area (L239). The PRG commented: "There are limited opportunities for informal interaction between staff and students. While the CA building has some informal social areas, it seems that these could be made more effective through modest further initiatives." This is a requirement that is important to the school, and opportunities for interaction could be greatly improved by the installation of social furnishings in L239. **Estimated cost: €5,000**.

4. Refurbishing the computer labs – replacing broken chairs, blinds etc. While the PRG recognised that the standard of equipment in the laboratories is high, there has been considerable wear and tear on the lab furnishings since they were equipped. A number of chairs need to be replaced, and the blinds in several labs also need replacing. **Estimated cost: €5,000**.

Total funding requirements amount to **€40,000**.

Summary of the one-year plan (recommendations to be implemented within one year)

The immediate and urgent need within the School is to finalise the arrangements for senior administrative support, and to establish it on a permanent basis. Much of what follows is dependent on this.

Organisation and management

The PRG identified areas of informality in the running of the School, which it recommended should be formalised. In particular it recommended a codifying of the guiding principles of the School into a strategic plan, and the formalising of the committee structure that manages the School. Both of these issues are being addressed.

Some aspects of organisation and management require input from other areas of the University. Completion of the Strategic Plan awaits implementation of Faculty re-structuring, and then action at the Faculty level.

Review of the Programme Board system is dependent on action by the University.

Programmes and instruction

Within the context of the Strategic Plan, the future of the CA Part-time Programme and the ACL programme, which are already under review, will be decided.

Issues with the operation of the Graduate Diploma in IT will be addressed.

The School intends to continue its policy of developing web-enhanced methods of teaching, and will investigate the practicalities of providing flexible, on-line and distance based provision of some of its programmes, particularly the part-time degrees. Experience with these technologies can be shared with Oscail.

The overall programme portfolio will be subjected to regular review.

The mechanisms for soliciting and acting on student feedback will be revised.

Scholarship and Research

Incentivise publication of research papers in journals and high-quality conferences.

Publish research papers on-line.

Social and Community Services

The School will continue its participation in the North Dublin Access programme, and strengthen its support for participating students.

It will make provision in its strategic plan to recognise contributions by staff to social and community service.

Staffing, Accommodation, & Resources

The immediate need is the provision of senior permanent administrative support.

Major vacancies in technical support will be filled.

The staff-student ratio will be improved.

The School will pursue a policy on gender balance as far as is practicable within constraints imposed by the University.

The progressing of a suitable social space to encourage informal networking will be a priority for the School.

4 Summary of the five-year plan (recommendations to be implemented within five years)

An overall long-term plan for the School will form part of the Strategic Plan, to be articulated as described above. Within the context of acting on the PRG report, only one item should extend over the one-year horizon. That is the question of improving the student-staff ratio to international norms.

Appendix One: Personnel involved in the Quality process

- **School Quality Committee (for the Self-Assessment Report)**

  Mr. Howard Duncan, lecturer (chair)
  Prof. Alan Smeaton, dean of faculty
  Prof. Joseph Morris, head of school
  Prof. Tony Moynihan, professor
  Dr. David Sinclair, senior lecturer
  Mr. Renaat Verbruggen, lecturer
  Dr. Cathal Gurrin, post-doc
  Ms. Mary Hearne, research student

- **Peer Review Group**

  Prof. Ronan Reilly, Department of Computer Science, National
  University of Ireland Maynooth (Chair)
  Ms Karen Forte, Head of IT, Allianz Insurance, Dublin
  Prof. June Verner, College of Information Science & Technology,
  Drexel University, Philadelphia, USA
  Dr Barry McMullin, Dean of Teaching & Learning, DCU (Rapporteur)
  Dr Bill Richardson, Head, School of Applied Languages &
  Intercultural Studies, DCU

- **School Quality Committee (for the Quality Improvement Plan)**

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