PART 2

DISCIPLINE-SPECIFIC LEARNING OUTCOMES:

SOME CASE STUDIES, REFERENCE POINTS, ISSUES AND INSIGHTS

PART 2 CONTENTS

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ABSTRACT

Qualifications frameworks provide overarching reference points to encourage consistency in, and facilitate comparability across, a wide range of educational awards. These reference points provide indicators as to the level and type of an award, and often, the volume of student workload associated with the particular award. The National Framework of Qualifications (NFQ) level indicators are expressed in terms of knowledge, skills and competences, each of which is further defined in sub-strands, for example breadth and kind of knowledge, range and selectivity of skill-sets, and context for the development of competencies. [22] In order to be relevant across the full spectrum of awards within a given educational system, the learning outcomes underpinning such frameworks are necessarily written at a high level of generality. However, since the programmes or courses leading to certified awards are invariably located within a particular field-of-study context (which may be single-discipline, inter-disciplinary or multi-disciplinary), in practice, the Framework provisions become meaningful and verifiable through the articulation of discipline-specific programme learning outcomes. The programme learning outcomes can be said to define the 'profile' of the qualification. This term is explained in a Council of Europe document: *The 'profile' of a programme/award "can refer either to the specific (subject) field(s) of learning of a qualification or to the broader aggregation of clusters of qualifications from different fields that share a common emphasis or purpose.* [23] It is the process of articulation of programme learning outcomes, and the challenges that it presents for programme designers and teachers, that are the focus here.

Part two of the university sector Framework Implementation Network (FIN) report seeks to identify and explore issues arising both for individual academics and subject communities in writing learning outcomes for discipline-specific programmes that are included in the NFQ; and to look at some practical ways of addressing those issues and concerns.

METHODOLOGY

At the time this group embarked on its work, some of the institutions in which members were based had already developed learning outcomes (though in most cases at the module level only), while others had not yet begun formally to work with learning outcomes. It was anticipated that, due to differences in institutional orientations, the process adopted in each institution regarding the development of learning outcomes would be quite different, with some working from the 'bottom up' to calibrate existing module outcomes by level and then moving on to programme outcomes, and others starting with programmes and progressing to outcomes at the module level. It was recognised that the introduction of an outcomes-based approach to higher education in Ireland requires the embedding on the ground of a different conceptual framework, based on the idea of 'competences'. According to the National Qualifications Authority of Ireland: *The Framework is designed to bring about change. It introduces a new approach to the meaning of an award, that an award will recognise learning outcomes - what a person with an award knows, can do and understands - rather than time spent on a programme.* [24]

For the individual academic, who is responsible for teaching his/her subject, the requirement to adopt an outcomes-based approach to teaching - to think in terms of what competences their students will have upon successful completion of a course rather than what they wish their students to know at the end of the course - can represent a very radical change, the full extent of which often only becomes apparent as one begins to engage in writing and using learning outcomes. Even where the benefits of learning outcomes are recognised, concerns persist regarding the displacement of subject-specific knowledge by generic competences and the potential for a consequential 'dumbing down' of higher education. On the other hand, there is also a risk that academics will not 'own' the generation of learning outcomes within their disciplines, thus potentially turning the process into a 'paper exercise', which subsequently does not influence teacher behaviour or realize the potential benefits of an outcomes-based approach.

This working group considered that it could be beneficial to look at this particular area of tension around learning outcomes, and through this focus, to encourage more positive engagement and a sense of 'ownership' on the part of academic staff dubious about the benefits or usefulness of learning outcomes or

[22] See Part 1 of this document pp 22-33.

[23] Bergen, S. (2007) *Qualifications – Introduction to a concept. Council of Europe higher education series 6.* Strasbourg: Council of Europe. pp. 118-27.

[24] National Qualifications Authority of Ireland (NQAI) (2003) *The National Qualifications Framework - An Overview.* Dublin: NQAI. p 2 [Internet]. Accessible from: http://www.nqai.ie/docs/publications/13.pdf

even hostile to the concept of the outcomes-based approach to higher education.

In order to explore whether (and in what way) distinct approaches to the writing of learning outcomes for programmes of study might be appropriate for different academic subjects or fields of study, this group chose to look at four subjects which are widely taught across the Irish third-level education system in single-discipline and inter-disciplinary formats, and which span the arts, social sciences, 'hard sciences' and performance-based fields of study. These were Business Studies, English, Music, and Physics.

One of the practical problems encountered by this FIN working group was that individual institutions tend not to make their programme outcomes available externally. The dearth of concrete examples of programme outcomes in the different subject areas was frustrating. So the working group invited academic colleagues working in the selected subject areas to collaborate in a series of programme learning outcomes case studies. These are presented in Section B.

In the UK, which has been working with learning outcomes for some time, and across Europe, where the outcomes-based Framework for Qualifications in the European Higher Education Area (the 'Bologna Framework') and the European Qualifications Framework (EQF) are now in operation, a great deal of work has been undertaken by groups of academics working in the different academic disciplines to describe the nature and extent of their particular subject or discipline, and to define the characteristics of degree programmes so as to provide a set of representative reference points for academic programmes at the different levels. The resulting UK Quality Assurance Agency (QAA) subject benchmark statements [25] and Tuning Educational Structures in Europe ("Tuning Project") subject reports [26] do not seek to prescribe the content of study programmes, but to facilitate comparability of programmes of study, while accommodating the complexity and diversity of degree programmes. The Tuning Project motto is "Tuning of educational structures and programmes on the basis of diversity and autonomy".

Of the subjects selected by the FIN working group examining the topic of discipline-specific learning outcomes, all four are represented in the UK Quality Assurance Agency (QAA) subject benchmark statements at Honours Bachelor degree level, though only Business & Management has so far been treated at Master's level. Subject-specific Tuning reports have been published for Business and Physics, and the implications of the Bologna Process for the study of Music at third level is currently a key topic for the Erasmus Thematic Network, Polifonia [27].

A seminar on the Bologna Process hosted by the Higher Education Authority, in association with the National Qualifications Authority of Ireland [28] in February 2009 in Dublin provided an opportunity to explore and discuss the views and experiences of academics currently involved in drafting and working with learning outcomes in these subject areas. Plenary session presentations from Professor Elisabeth Jay [29] on subject benchmarking in the UK for English, from Professor Gareth Jones [30] on the Tuning process and Physics benchmarks, from Dr. Peter Cullen of the Higher Education and Training Awards Council (HETAC) on the experience of developing subject-specific standards in that sector, and from Dr. Norma Ryan, Director of Quality Promotion Unit, University College Cork and Bologna Expert on linked quality assurance issues, offered valuable insights into the subject-benchmarking and Tuning processes. Four workshops took place, each focusing on one of Business Studies, English, Music and Physics. Participants explored questions concerning the learning characteristics for graduates in the given discipline, how to identify in learning outcomes terms the academic milestones in a programme, and questions concerning the desired balance between discipline-specific and 'generic' skills and competences. A summary of the discussions that took place is provided in Section C.

[25] For further information, please see Quality Assurance Agency for Higher Education (QAA) (2009) *Subject Benchmark Statements*. [Internet]. Available from: http://www.qaa.ac.uk/academicinfrastructure/benchmark/default.asp.

[26] For further information, please see Tuning Educational Structures in Europe (2009) *Subject Areas*. [Internet]. Available from: http://tuning.unideusto.org/tuningeu/index.php?option=content&task=view&id=7&Itemid=30

[27] Please see The Erasmus Thematic Network for Music 'Polifonia' (2009) *Polifonia*. [Internet]. Available from: http://www.polifonia-tn.org/

[28] The university sector Framework Implementation Network participated with the Irish Bologna Experts and the HEA in an interactive colloquium addressing the design of discipline-specific learning outcomes: *Supporting the Design of Discipline-Specific Learning Outcomes*, held on 6th February 2009. Presentations made on the day can be accessed from the network website: http://www.nfqnetwork.ie/News/Default.76.html

[29] Professor Elisabeth Jay, Associate Dean of the School of Arts and Humanities, Oxford Brookes University, and member of Review Group for the UK Quality Assurance Agency Subject Benchmark Statement for English.

[30] Professor Gareth Jones, Professor Emeritus and Senior Fellow in Physics, Imperial College London, and Tuning Expert.

SECTION A: MODELS FOR WORKING IN A DISCIPLINE-SPECIFIC CONTEXT

As noted above, this working group's deliberations have been informed by the reports of the EU Tuning Educational Structures in Europe Groups and by the UK Quality Assurance Agency (QAA) experience in writing subject benchmark statements for its university sector. Both provide valuable resources and reference points when seeking to design discipline-specific learning outcomes for programmes/awards referenced through the NFQ.

TUNING EDUCATIONAL STRUCTURES IN EUROPE [31]

The project on Tuning Educational Structures in Europe, which commenced in 2000 with support from the European Commission, aims *"to offer a concrete approach to implement the Bologna Process at the level of higher education institutions and subject areas".* An important aspect of the Bologna Process is concerned with achieving comparability of qualifications - and thereby also of study programmes - at the Bachelor, Master and Doctoral levels (Bologna cycles 1, 2 and 3 respectively) across national boundaries in Europe. With a particular focus on the subject or content of studies, Tuning proposes a common approach to describing, (re-)designing and evaluating academic programmes in different subject areas in the three degree cycles. This approach references the accepted level indicators for the three Bologna degree cycles (the 'Dublin Descriptors') and other key factors in establishing comparability: the competences of graduates derived from intended learning outcomes, the use of a common measure of student workload that serves for the accumulation and transfer of academic credit (the European Credit Transfer and Accumulation System [ECTS]), and common approaches to quality assurance and accreditation.

The project has been conducted through an extensive Europe-wide consultation process involving academics, graduates and employers. Subject-specific working groups have reported across a wide range of academic subjects, mainly, so far, at the Bachelor and Master levels. This focus on the subject is crucial for universities. According to the Tuning literature, *the name Tuning is chosen for the Process to reflect the idea that universities do not and should not look for uniformity in their degree programmes or any sort of unified, prescriptive or definitive European curricula but simply look for points of reference, convergence and common understanding.*[32] In this way, the Tuning approach promotes the 'tuning' of curricula in subject areas, while at the same time recognising the validity and positive value of institutional autonomy and diversity and, by extension, of the centrality of the individual academic in the process. The educational stimulus which derives from the local context is also taken account of through the project's recognition of the importance of consultation with employers and professional bodies in relation to university curricula.

With regard to learning outcomes, Tuning differentiates between learning outcomes which are written by staff and competences which are obtained by students. It recognises that competences - both subject-specific and generic - are developed in and through the particular study programme.

UK QUALITY ASSURANCE AGENCY (QAA) SUBJECT BENCHMARK STATEMENTS

As part of its work in assuring and improving the quality of study programmes in universities, the UK Quality Assurance Agency initiated the development of subject benchmark statements. The brief for the QAA subject-benchmark groups was *to define the nature of the Bachelors degree in [subject], mapping out the subject territory and describing the range of skills and attributes of graduates in the subject; to articulate in a statement the minimum requirements or expectations of achievement, commonly called the 'threshold' level for an award in [subject] …..; similarly to express enhanced indicators for a 'typical' or 'focal' level of achievement.* [33]

[31] Tuning Educational Structures in Europe (2007) *Introduction to Tuning Educational Structures, General Brochure.* [Internet]. Available from: http://www.tuning.unideusto.org/tuningeu/

[32] *Ibid.*

[33] Quality Assurance Agency for Higher Education (QAA) (2009) *Subject Benchmark Statements.* [Internet]. Available from: http://www.qaa.ac.uk/academicinfrastructure/benchmark/default.asp

According to the QAA website, *subject benchmark statements set out expectations about standards of degrees in a range of subject areas. They describe what gives a discipline its coherence and identity, and define what can be expected of a graduate in terms of the abilities and skills needed to develop understanding or competence in the subject. […] Subject benchmark statements do not represent a national curriculum in a subject area, rather they allow for flexibility and innovation in programme design, within an overall conceptual framework established by an academic subject community.* [34] These subject benchmark statements have been developed by independent subject benchmark groups comprising senior members of the academic community. So far, such statements have been published by the QAA for a wide range of subjects at Honours Bachelor level, including: general business and management; English, music, and physics, astronomy and astrophysics. Statements have also been written for business and management, and physics at the Masters' level. See Appendix 1 of this section for links to these materials.

SECTION B: CASE STUDIES IN WRITING OUTCOMES FOR DISCIPLINE-SPECIFIC PROGRAMMES

For the purposes of this report, individual academics were invited to contribute a brief summary of their experiences and views on writing discipline-specific learning outcomes; these largely take the form of 'case studies'. Where available, the associated learning outcomes in published or draft format are also included.

The case studies are:

- Business Studies: M.B.S. in Human Resource Management (NFQ level 9 Master's Degree), University of Limerick, with programme learning outcomes.
- English Literature (1): B.A. in English Literature (NFQ level 8 Honours Bachelor Degree), NUI Maynooth.
- English Literature (2): B.A. in English Literature (NFQ level 8 Honours Bachelor Degree), University College Dublin, with programme learning outcomes.
- Music: B.Mus.Ed. (NFQ level 8 Honours Bachelor Degree), conjoint programme between Trinity College Dublin, the Dublin Institute of Technology Conservatory of Music and Drama and the Royal Irish Academy of Music, with draft programme learning outcomes.
- Physics: B.Sc. in Applied Physics/Physics with Astronomy (NFQ level 8 Honours Bachelor Degree), Dublin City University, with draft and final programme learning outcomes.

[34] *Ibid.*

CASE STUDY 1: BUSINESS STUDIES

Discipline	Business/HR
Programme	MBS in HRM
College	Kemmy Business School, University of Limerick
NFQ	Level 9

1. Please outline the process you adopted in order to arrive at an agreed set of programme outcomes.

Note: By 'process' is meant both the local drafting process, and the verification process at institutional level.

First steps included attending training sessions in the University and consulting with the Course Board. I drafted the learning outcomes for the programme taking into account any insights and input from lecturers on the programme. Following this, I sent the programme outcomes to the Course Board for any comments. It was important to incorporate learning outcomes from all modules on the programme – it was also important to clarify the level of student understanding/knowledge/skills – for the MBS in HRM, this level would be level 6 on Bloom's taxonomy.

Verification at institutional level was through Head of Department, Dean and finally the Vice President.

2. What were your main reference points (internal and external)?

Prompts: Did you consult Tuning Group descriptors, UK subject-benchmark statements, documentation from professional institutes, NQAI documentation?
Was there a consensus about what are the most important things that students of your discipline should learn in the selected programme (graduate attributes)?

My main reference points were NQAI literature and the training sessions provided by the University of Limerick. However, I also consulted other programme leaders, the Course Board for the MBS and other documentation from professional institutions. The UL training sessions and the information on the Centre for Teaching and Learning website were extremely helpful. There was general consensus about what a graduate should know/do and to what level.

3. What challenges did you encounter in the drafting stages and how did you overcome them?

The main challenge was trying to capture the programme learning outcomes within the framework given. I grappled with the problem of including generic skills and competencies while maintaining a subject specific focus, It was a challenge to effectively communicate to students the expectations and desired outcomes of the programme in a clear, economical and meaningful way. However, the training course and the NQAI literature helped with this.

4. What have been the benefits (if any) of drafting and working with learning outcomes at programme level and at module level?

I found this to be extremely beneficial for several reasons:

- Thinking about and drafting the programme and module outcomes provided me with an opportunity to reflect on the programme (in terms of philosophy, expectations etc)

- It required me to think about what the essential things a student needs to know/do upon completion of the programme. The use of Bloom's taxonomy helped with this process as it provided a hierarchy of ways students can demonstrate their understanding. This helped me clarify what a MBS student needs to know and do – and how well they need to do this.

- It also highlighted the importance of having measurable outcomes – it is important to be able to assess the learning outcomes. I realised through this process that I had written vague and immeasureable outcomes in the past. I have also learnt through this process the importance of using the appropriate action verbs when writing learning outcomes.

5. What has been the impact of the programme learning outcomes on teaching, assessment, and on student behaviour and performance?

It is quite difficult to fully answer this question at this stage – particularly with regard to student behaviour. However, from my own perspective (and from my conversations with some of the programme lecturers on the course, they seem to agree) I found the process has provided me with the valuable opportunity to rethink some of my assessments and learning outcomes. It has provided me with clarity and has helped me focus on the needs of the student.

In terms of the impact on students, it is too early to say but I hope this process will improve the communication between lecturers and students and will clarify for students what is expected of them and how this will be measured. I also hope it will help potential students make better informed decisions regarding what programmes they want to do.

MASTER OF BUSINESS STUDIES IN HUMAN RESOURCE MANAGEMENT F/T

Learning Outcomes:

Knowledge - Breadth & Kind

Identify the competitive, economic and regulatory contexts in which organisations operate both nationally and internationally

Critically evaluate the latest developments occurring in the HR profession and assess the applicability of these developments in differing organisations

Conceptualise, research and write reviews of specific areas of investigation.

Knowledge and Skill - Range & Selectivity

Know how and skill – range:

Demonstrate managerial ability through the application of advanced communication, conflict resolution, interpersonal and team effectiveness skills

Know how and skill – selectivity:

Apply the appropriate professional skills and knowledge in a variety of different business settings

Apply set of analytical tools and skills required to formulate human resource policies and programmes that will respond to the exigencies imposed by national and international contexts.

Competence - Context & Role

Competence – context:

Develop and apply the appropriate advanced skills and knowledge to decision making and problem solving in complex and uncertain business settings

Competence – role:

Develop interpersonal skills, confidence and ability to achieve personal targets and goals.

Apply the appropriate skills and knowledge needed to manage multiple roles in the workplace including leadership, team and conflicting roles.

Competence - Learning to Learn

Apply personal effectiveness skills such as time management, prioritising, reflection and action planning to the management of work commitments and professional development.

Competence – Insight

Synthesise and address the different theories, concepts, issues and problems pertaining to human resource profession.

CASE STUDY 2: ENGLISH LITERATURE (1)

Discipline	English Literature
Programme	B.A.
College	NUI Maynooth
NFQ	Level 8

1. Please outline the process you adopted in order to arrive at an agreed set of programme outcomes.

Note: By 'process' is meant both the local drafting process, and the verification process at institutional level.

In 2007, the School of English embarked on a wholesale revision of its BA (omnibus entry) programme from Level 1 (Year 1) right through Level 3 (Year 3). In addition, the School introduced for the first time a new BA in English (designated entry). Programme content and outcomes were developed and agreed at programme-development meetings of the Department before being forwarded to the Teaching and Learning Committee of the University for discussion and approval; subsequently, they go before the Faculty of Arts, Celtic Studies and Philosophy for review and approval.

Initial discussions about programme content may not have been couched in the language of learning outcomes but were concerned with questions of a balance between coverage (for instance, do students need to have the traditional survey course on Romanticism?) and approach. At the core of the programme are modules that constitute a traditional English syllabus, covering English literature from the Renaissance through the Restoration to Romantic Poetry and Modern and Postmodern culture, and systematically covering the main literary genres: fiction, drama and poetry. But the importance of designing a syllabus that would seek to reflect the situation of English literature in Ireland today was also recognised. So, the programme statement mentions "As Ireland becomes both more culturally diverse, and increasingly wants to examine its own culture, this degree will allow students to study Irish writing in a global context as a strand within an English degree". Additionally, with reference to both University and broader Government targets to increase graduate intake, it was felt that the integration of undergraduate and graduate study, with the former directly feeding into MA and research degrees, should be facilitated. This is reflected in the programme statement ("Those students who may wish to consider further postgraduate study will find that the programme provides a solid, three-year grounding in research techniques and literary theory") and also in the content.

There was broad consensus as to the outcomes of the programme: that is, in their final year, students who studied English at NUI Maynooth would have: good communication skills; strong analytical and conceptual facilities; the capacity to identify and also to use different theoretical approaches. And, discussions worked from desired graduate attributes (critical-thinking skills; lateral thinking; good oral and written communication; self-directed work and group work) back to how these might be realized through individual modules. It was felt that increasingly students entering university are not equipped with the requisite critical thinking skills for studying literature at university level and that is unfair to expect them to absorb these, as if by osmosis.

Thus, from the outset it was felt that individual modules needed to interconnect more explicitly and facilitate the development of the student's critical aptitude. In re-designing the programme, then, the importance of identifiable strands running through from Level 1 to Level 3 was recognised. Accordingly, Level 1 is made up of four modules Criticism and Research (I) and three Studies in Literary Form modules dealing with (II) Poetry, (III) Fiction and (IV) Drama respectively. Both the Criticism and Research strand and Literary Form strand are developed in Levels 2 and 3. The objective with the Criticism and Research module is to introduce students to the analysis of literature at university level and to orientate their learning in terms of critical-thinking skills and research methods. Through Criticism and Research II and III respectively, students engage in particular theoretical schools in these later modules, so the movement is from the general of Level 1 to specificity and depth at Levels 2 and 3. This is reflected in the learning outcomes for these later modules, which indicate a higher expectation and specificity (e.g. "On completion of this module, students will have a formation in critical and cultural theory and, through small group seminars, developed their own research topics"). The objective here was to provide a learning map that would enable the student to clearly identify expectation (from Level 1 to 2 and 3, from general to specific, survey to in-depth) and, crucially, progression. And, this is an attribute of the revised programme that the external examiners (BA 2009) identified as a particular strength.

In addition, in designing the programme it was felt that it should reflect current trends in Irish and international scholarship more explicitly – in that way, students taking English at NUI Maynooth would be able to identify how their degree was different to comparable degrees elsewhere. To this end, it was decided that we would have two strands, Irish Studies and World Literature, that would begin in Level 2 and continue into Level 3. It was additionally noted that foregrounding these areas at this stage usefully feeds into the two MA programmes (Twentieth Century Irish Writing and Culture, Empire and Postcolonialism).

2. What were your main reference points (internal and external)?

Prompts: Did you consult Tuning Group descriptors, UK subject-benchmark statements, documentation from professional institutes, NQAI documentation?
Was there a consensus about what are the most important things that students of your discipline should learn in the selected programme (graduate attributes)?

We looked at internal programme and module learning outcome templates but for the most part the emphasis was on colleagues' sense of trends in the discipline and also experience of teaching to a large and varied student cohort. As stated above, there was agreement as to graduate attributes and recognition of the need to write these into module objectives and assessment methods.

3. What challenges did you encounter in the drafting stages and how did you overcome them?

For a subject like English that is by its nature quiet, discursive and nuanced, module descriptor templates can present some problems as they can appear rather scientific or mechanical. Accordingly, effort was made to accommodate these templates to the subject, and to balance coverage and method (e.g. EN 353 Postmodern Writing and Culture: "On completion of this module students will have a good knowledge of the key critical accounts of postmodernism and will be experienced in using these in the interpretation of contemporary literature and the arts") without seeming reductive or simplistic.

The importance of blending outcomes and assessment was recognized and for the most part an effective relationship between the two has been achieved with the new programme. There was discussion about varying modes of assessment and this is the case with all modules, which involve a combination of essay, examination and weekly Moodle or e-learning exercises. It was noted that small-group seminars and seminar essays facilitate the optimum blending of outcomes and assessment for a discipline like English. However, resources limit the extent of this significantly. That said, the advantage of the formal exam, where students are required to engage with unseen questions in a finite time, was noted as a very good barometer of their competencies and knowledge in the discipline.

4. What have been the benefits (if any) of drafting and working with learning outcomes at programme level and at module level?

As a general principle, developing learning outcomes for a module is a useful exercise both for lecturers in early stages of their careers, and for those who are more experienced. For the former, it helps control the tendency to make modules overly complex or dependent on their own research interests; for more experienced lecturers, writing learning outcomes provides an occasion to reflect on the main purpose of modules that may have developed and evolved over the years. From an administrative point of view, it is helpful to be able to look at learning outcomes for the totality of all modules in a programme as a way of getting an overall impression of the coherence and direction of a given programme.

5. What has been the impact of the programme learning outcomes on teaching, assessment, and on student behaviour and performance?

In introducing a new programme, the result has been more cohesive and integrated modules and a clearer sense of a student's progression through to graduation. In terms of assessment, there is a clearer sense of what each module is 'doing' and how it relates to the overall programme. It has been our experience to date – confirmed by the external examiners for BA 2009 – that students are drawing from different modules in their continuous assessment rather than compartmentalizing material as happened with the old syllabus. Also, with increasing consciousness about learning outcomes (although there persists among some academics a

scepticism about the shift towards this vocabulary), we have implemented Grade Descriptors for all markers and for all forms of written assessment. These descriptors, which are made available to students via Moodle, indicate different levels of competency and specificity that neatly and usefully overlap with learning outcomes as they progress from Level 1 to Levels 2 and 3.

6. Free comments

There is a need to exercise a certain amount of recognition of the specificities of individual academic disciplines. Having been involved in running both a Media Studies programme and an English programme, I would have a clear sense that in the case of the former, certain modules (those in media production) would have strongly instrumentalist outcomes: ("To enable students to use ProTools to edit..."); whereas in a Humanities discipline such as English, the learning outcome should not be forced to conform to an instrumentalist learning agenda. Sometimes, the intended learning outcome of a module on the Victorian novel is simply to learn about the Victorian novel – not to teach transferable skills relating to composition by stealth.

Finally, I would strongly urge the abolition of the distinction between "aims" and "objectives" that many module descriptors seem to require. I have yet to receive a convincing explanation of the difference between these two categories; most people I know simply cut and paste the content of the "aims" field into the field for "objectives".

CASE STUDY 3: ENGLISH LITERATURE (2)

Discipline	English Literature
Programme	BA
College	Arts and Celtic Studies, UCD
NFQ	Level 8

1. Please outline the process you adopted in order to arrive at an agreed set of programme outcomes.

Note: By 'process' is meant both the local drafting process, and the verification process at institutional level.

These comments relate to two linked, but separate processes: (1) the formulation of learning outcomes across the whole suite of modules offered in English; and (2) the writing of learning outcomes for modules designed to be delivered using Enquiry Based Learning (EBL). In the first instance (1) a small group within the school (a subset of the teaching and learning committee) drafted some initial outcomes, trying to identify the qualities, competencies and knowledge that we wished a graduate of English to have. This was initially a fairly lengthy list, which we then attempted to place into categories – in other words moving from complex and detailed statements to short, clear, generic ones. What one might call 'programme outcomes' are relevant to several aspects of the programme – at module level, at each stage, and also at level 4 (Masters' level). The movement overall is from specific to general, from detail to simplicity, so a level 1 (First Year) learning outcome might state that the student will learn how to locate an article on Chaucer's *Canterbury Tales* on JSTOR, whilst a level 3/programme one will set out that the students will acquire research skills relevant to the discipline. For certain kinds of module, e.g. seminars, many of the outcomes would be held in common across modules, with variations to take account of specific subject areas – this helps to make a programme delivered through 100+ modules cohere to some degree, whilst encouraging variation. In the second case (2) the approach was radically different as the modules were defined by process and delivery rather than purely by content. Thus the usual process of developing outcomes was inverted so that the module structure and content were determined by the learning outcomes – this would be typical of EBL which is strongly process driven. In addition, the EBL modules have learning outcomes that relate to different levels and components: module outcomes, but then more detailed and specific outcomes relating to individual assignments of problems. This, in our view, was essential for guiding both teachers and students through a learning style that is necessarily less structured than the traditional mode of delivery.

2. What were your main reference points (internal and external)?

Prompts: Did you consult Tuning Group descriptors, UK subject-benchmark statements, documentation from professional institutes, NQAI documentation?
Was there a consensus about what are the most important things that students of your discipline should learn in the selected programme (graduate attributes)?

We did look at some of the UK subject statements, and some of the NQAI documents (this latter mostly in relation to guidance about what was appropriate to each level), but beyond that we tried quite hard to articulate our own vision which we then expressed in language appropriate to the task, using, amongst other things, guidelines internal to UCD. There was a pretty clear consensus about attributes, but less agreement on the means by which these should be achieved.

3. What challenges did you encounter in the drafting stages and how did you overcome them?

There was initial resistance to this kind of approach, so it was incumbent upon us to demonstrate how learning outcomes can actually streamline and focus teaching, by providing structure and examples. There's an important segment around application and implementation, namely how the outcomes can be properly embedded in the curriculum and in assessments. This requires training and guidance that is difficult to put in place given resources and pressures on time – only then do learning outcomes become anything more than aspirational statements that threaten to float away from actual practice.

4. What have been the benefits (if any) of drafting and working with learning outcomes at programme level and at module level?

The development of clarity and coherence across the programme, and a more logical sense of how the student progresses as they move through the programme. The process of articulating what students should be able to do was very useful and increased staff confidence and interest in their teaching.

5. What has been the impact of the programme learning outcomes on teaching, assessment, and on student behaviour and performance?

They have enabled us to be far more consistent about delivery and assessment, as the learning outcomes have become the benchmark by which individual assignments are judged. This has been particularly useful in judging group work, where individual students have sometimes questioned their grade. In terms of student behaviour learning outcomes have not yet had as much of an impact as we would like – first years in particular are so content-driven that they find it hard to extrapolate to skills and competencies. In future years in EBL at least, we plan to focus more explicitly on learning outcomes and encourage students to use them to assess their own progress. We have seen an improvement in student performance, particularly in the B and C grad bands, and a reduction in the fail rate – this could be due to many factors (the EBL method, the impact of group work etc), but owes something at least to the clear and consistent grading enabled by coherent learning outcomes.

6. Free comments

I was initially something of a skeptic about learning outcomes, believing (like most academics) that what I was trying to do must be self-evident. But the process of sitting through and being selective about what should achieved in a given context has been most useful and has significantly improved course design, delivery as well as strengthening student learning.

CASE STUDY 4: MUSIC

Discipline	Music
Programme	Bachelor in Music Education (Concurrent Honours Bachelor degree and second-level teaching qualification, working NFQ Level 8) ECTS credits 240+ over 4 years
College	Trinity College Dublin in association with the Dublin Institute of Technology Conservatory of Music and Drama and the Royal Irish Academy of Music.
NFQ	Level 8

1. Please outline the process you adopted in order to arrive at an agreed set of programme outcomes.

Note: By 'process' is meant both the local drafting process, and the verification process at institutional level.

After some internal discussion within TCD on the best way to approach the process of devising learning outcomes, the Course Co-ordinator for the Music education degree devised the outcomes. Shared initially with the School of Education's Director of Teaching and Learning (Undergraduate), the draft outcomes underwent further development in terms of content, format, expression and clarity. During this iterative process the number of learning outcomes was increased. Subsequently, the draft outcomes were circulated to key personnel involved in the planning, administration and running of the B.Mus.Ed. programme. Constituted as the Course Co-ordinating Committee, this group includes representatives of the Schools in Trinity which contribute to the programme (namely Education, Music, and Histories and Humanities) and of the partner institutions, namely the Royal Irish Academy of Music and Dublin Institute of Technology Conservatory of Music and Drama. The learning outcomes were circulated in advance of the meeting and thoroughly discussed by representatives. The programme outcomes were then forwarded to Trinity's learning outcomes project 'triage group' for comment and feedback.

2. What were your main reference points (internal and external)?

Prompts: Did you consult Tuning Group descriptors, UK subject-benchmark statements, documentation from professional institutes, NQAI documentation?
Was there a consensus about what are the most important things that students of your discipline should learn in the selected programme (graduate attributes)?

Trinity College offered a number of working seminars on drafting learning outcomes, facilitated by the Bologna Desk of the Vice-Provost's Office. These seminars proved useful in raising awareness and providing possible strategies. More focused local meetings helped focus attention on devising learning outcomes in general, primarily using the existing music education programme objectives and content and guidelines. As part of the process of conceptualizing the outcomes, consideration was given to visualizing the qualities required in potential post-primary music teachers.

Other reference points included a music education conference in Exeter attended by the B.Mus.Ed. Course Co-ordinator in which the 'Tuning' Music Working group presented their initial report on learning outcomes. The preamble to, and philosophy behind, their attempt to write comprehensive learning outcomes for music education was very informative. They also attempted to define learning outcomes and put their significance in the context of music education, and were on hand to answer questions from the floor. This informal contact was very useful. Other reference points emerged from the development of programme learning outcomes for the other main TCD School of Education undergraduate programme, the Bachelor in Education. This was underway at the same time as drafting for the B.Mus.Ed. and dialogue between those responsible for each programme was mutually beneficial.

3. What challenges did you encounter in the drafting stages and how did you overcome them?

The initial learning outcomes numbered about seven. To facilitate greater clarity and in light of the complex multi-faceted nature of the programme and its delivery, some dis-aggregation of learning outcomes was

undertaken to reflect more fully the breadth and depth of the student learning experience within and outside Trinity. Whereas the number of outcomes probably ultimately exceeded what was initially envisaged, the broad range of programme elements necessitated similar breadth in learning outcomes. Getting to grips with the specific language of learning outcomes promoted in the Bologna initiative - the 'normal' way to write them up- was another challenge, though perhaps less so than in other Schools given the familiarity of School of Education staff with the nomenclature and concepts of aims, objectives and outcomes. In addition to this it was a challenge to sustain enthusiasm for a task that seemed at times to be very bureaucratic. This lessened as the process gathered momentum, but it was a factor in the early stages. Understandably, given the breadth and scale of the programme, along with their other professional commitments, participating staff are extremely busy and securing their time to focus on the learning outcomes initiative was not always straightforward. As the process matured and especially once draft outcomes were available for discussion, securing the involvement of most decision-makers was more readily achieved.

4. What have been the benefits (if any) of drafting and working with learning outcomes at programme level and at module level?

There have been benefits in terms of greater insight and understanding of the B.Mus.Ed. programme. Devising learning outcomes provided another opportunity for reflecting on the programme - of asking ourselves "is what we are teaching central to what a music teacher needs to know?" It has encouraged us to look to the future of music education, and has reminded us that our programme needs to anticipate this future and offer student the relevant skills ands knowledge for this time. It has given us the opportunity to weigh the relative importance of each skill as a facet of the overall programme.

It also helps to clarify our vision of what we believe a great music teacher to be, and to strive to facilitate development to this level for all of our students.

For new staff becoming involved, the availability of learning outcomes offers an efficient, effective way to get to know the programme, starting with the important vision and philosophy as articulated in the programme learning outcomes.

5. What has been the impact of the programme learning outcomes on teaching, assessment, and on student behaviour and performance?

Our learning outcomes have only recently been developed so we have experienced impacts from the drafting process only. The impact we hope to achieve includes clarity for employers in what they can expect from a music education graduate of this programme; clarity for our students as to what to expect from the programme, and clarity for lecturers as to what their targets are in teaching the students.

6. Free comments

The process of devising learning outcomes at programme level has assisted in providing clarity and transparency for our degree. Beginning with devising learning outcomes at programme level has given us the destination and the overall vision of what we want to achieve. The time and energy required to bring such a process to fruition ought not be under-estimated, especially where staff from different Schools and Colleges are involved in planning and teaching the same programme. Such an initiative is worthwhile, but it requires considerable time and commitment on the part of academic and administrative staff.

2nd Draft Programme Learning Outcomes

On successful completion of this programme, the graduate will be able to:

1. Articulate a sound personal philosophy of the aesthetic, cultural and practical value of music and history in relation to human development and educational curriculum.

2. Demonstrate a thorough understanding of the music and history curricula specified for upper-primary and post-primary schools and leading-edge methods for mediating the curriculum to students based on the informing disciplines of education and prevailing influences on educational practice.

3. Develop high-quality plans and support material, predicated on thorough subject-matter and pedagogical understanding, to guide their teaching of music and history.

4. Work effectively as a reflective teacher with a problem-solving orientation, drawing on best-practice methodologies in relation to planning, instruction, learning, classroom management and student assessment.

5. Confidently relate to and work within differing school and teaching contexts, accommodating the range of students' interests, abilities and home-support contexts.

6. Work effectively as part of a professional team within the organisational and managerial structures prevailing in post-primary education.

7. Demonstrate advanced knowledge, skills, competencies and performance in relation to music and history, leading to lifelong personal interest and enjoyment in the respective fields.

8. Demonstrate high standards of musical performance commensurate with graduates' future status as role models for aspiring students of music in post-primary schools and as leaders of music curricular and extracurricular activities in schools.

9. Articulate, practice and defend appropriate professional, ethical, compassionate, social and cultural positions in relation to teaching and learning.

10. Be aware of the legal and professional obligations in respect of his/her role with young people and act professionally at all times in the best interests of the students and their parents.

11. Value throughout life further learning opportunities and experiences in relation to education, music and history.

CASE STUDY 5: PHYSICS

Discipline	Physics
Programme	B.Sc. in Applied Physics/Physics and Astronomy
College	Dublin City University
NFQ	Level 8

1. Please outline the process you adopted in order to arrive at an agreed set of programme outcomes

Note: By 'process' is meant both the local drafting process, and the verification process at institutional level.

The teaching convenor and programme chairs looked at the existing degree accreditation documents, the Tuning and IOP (Institute of Physics) documents and made a first draft. This was then circulated to all the staff teaching on the programmes and revised in light of their comments..

Using the template provided within the University the physics programme outcomes were then looked at internally in DCU by the AFI* and Teaching and Learning staff, who made some minor changes and they were then submitted for external evaluation.

Further amendments were made on foot of comments from the external Validation Panel.

* AFI - Academic Framework for Innovation; a curriculum reform project in DCU within which the change to Learning Outcomes is being carried out.

2. What were your main reference points (internal and external)?

Prompts: Did you consult Tuning Group descriptors, UK subject-benchmark statements, documentation from professional institutes, NQAI documentation?
Was there a consensus about what are the most important things that students of your discipline should learn in the selected programme (graduate attributes)?

Sources:

- Internal degree accreditation documents (especially the more recent Physics/Astronomy one).
- Tuning Project: Reference points for the design and delivery of Degree Programmes in Physics.
- Institute of Physics document :The Physics Degree (Core of Physics). http://www.iop.org/activity/policy/Degree_Accreditation/file_26578.pdf
- DCU Award Learning Outcome template.

There is a wide consensus across Europe about the contents of a Bachelor Physics degree, which is reflected in the Tuning document. However, there is a difference in approach between continental Europe and the more experimental Anglo-American tradition. Because of this the IOP document proved to be a better guide as it is more detailed and corresponds closely with the approach adopted in Irish Universities.

3. What challenges did you encounter in the drafting stages and how did you overcome them?

The main difficulty was in knowing where to begin as most staff were unused to the concept of learning outcomes. Once the initial difficulties were overcome the drafting was reasonably straightforward. Some difficulties were experienced in getting the wording right and some staff felt that there was a too rigid approach to using the "correct" words in the final version.

4. What have been the benefits (if any) of drafting and working with learning outcomes at programme level and at module level?

At programme level there is a benefit in looking again at the degree content and how it fits together. This is especially important in the Applied Physics programme which was designed 25 years ago and has undergone many piecemeal changes since then.

The module learning outcomes are being drawn up at present. This should allow a focus on the topics really required and later on how the various modules correlate with the overall programme structure. This will be done in the near future.

5. What has been the impact of the programme learning outcomes on teaching, assessment, and on student behaviour and performance?

None to date as the process is not yet compete.

6. Free comments

Experience has shown that staff are much more comfortable with this process if they are presented with an appropriate template for both programme and module learning outcomes. It is also vital that the appropriate supporting software is in place and working before the process starts. Delays in providing the appropriate backup can lead to extremely short deadline for the staff producing the learning outcomes.

LEARNING OUTCOMES (A): DRAFT submitted to External Verification Panel

School	Physical Sciences, Dublin City University
NFQ Award Title	Honours Bachelor Degree
DCU Award Title	BSc in Physics with Biomedical Sciences
Class of Award Type	Major
Purpose	This is a multipurpose award. A student would register for this award in order to: a) pursue an interest in physics and the applications of physics to the biomedical sciences; b) acquire the prerequisite knowledge and skills to seek employment in the biomedical and high-tech sectors, physical engineering, physics and science teaching; c) acquire the knowledge and skills to pursue postgraduate studies in physics, applied physics, medical physics, biomedical sciences; d) to be eligible to receive the professional designation of Chartered Physicist from the Institute of Physics (London).
Level	Level 8
Volume	240
	Upon successful completion of the programme of study for this award, a graduate will be able to demonstrate: the fundamental knowledge, skills and general competences that pertain to a core physics degree programme with an emphasis on the applications of physics to biomedical sciences; an understanding of how the natural sciences underpin the biomedical sciences and their applications.
Knowledge- Kind	**Upon successful completion of the programme of study for this award, a graduate will be able to demonstrate:** an understanding of the theory, concepts and methods pertaining to the broad areas of classical and modern physics, as encapsulated in the Institute of Physics (IOP) core of physics, which includes mechanics, electricity and magnetism, thermal physics, relativity, nuclear and particle physics, quantum physics, optics, electronics, statistical physics and spectroscopy in addition to some related material in mathematics and programming; an understanding of the fundamentals of biology, biochemistry, physiology, anatomy and chemistry relevant to the biomedical sciences; an understanding of selected advanced topics in the applications of physics to the biomedical sciences such as medical imaging; a knowledge and experience of the research methods used in applied physics/biomedical sciences.

Feedback from DCU External Verification Panel

- Purpose is a very good example.
- Knowledge Breadth – change 'good' knowledge in the third paragraph to an alternative word or remove word 'good'.

- Know How and Skill Range: 2nd point could move to Knowledge Breadth and 8th point could move to Competence Insight. Change reference to vast to wide instead in first paragraph.
- Competence Learning to Learn: see guidelines and template with regards to 'ethics'.
- Progression & Transfer: see template guidelines.
- Articulation: see template guidelines.

(B) Final version approved by Academic Council

Award Code	DC173
Title	*BSc in Physics with Biomedical Sciences*
Award Type	Major
Level	Level 8
Volume A	Large
Volume B	240
Purpose	To acquire the fundamental knowledge, skills and general competences that pertain to a core physics degree programme with an emphasis on the applications of physics to biomedical sciences, with a view to: fulfil a personal interest in this subject, be able to participate and engage in community and society activities related to the biomedical sciences, be able to gain employment in a private or a public concern with a core interest in the biomedical area, to qualify for higher education and training in the biomedical sciences.
Knowledge Breath	Graduates will have a working knowledge of the broad areas of physics, as encapsulated in the Institute of Physics (IOP) core of physics (topics such as mechanics, electricity and magnetism, thermal physics, relativity, nuclear and particle physics, quantum physics, optics, electronics, statistical physics and spectroscopy, in addition to related material in mathematics and programming). Graduates will have a good understanding of how the fundamentals of physics, chemistry and biology underpin the biomedical sciences with a particular emphasis on the working principles of biomedical instruments. Graduates will have a good knowledge of a selection of advanced topics in the biomedical sciences based on current state-of-the-art technologies, e.g., nanobiophotonics.
Knowledge Kind	The learner will have gained understanding of the fundamental principles of physics and other selected advanced topics in physics by studying lecture notes, textbooks or web-based material. The Learner knows how to apply the fundamentals of physics theory to solve numerical problems and exercises. The Learner has gained knowledge and understanding of the fundamental laws by carrying out an extensive range of experimental projects. The Learner has gained practical experience of the biomedical environment from a suitable period of training on site, such as the medical physics department of a hospital.

Know How and Skill - Range	The Learner has acquired a vast range of basic and advanced skills and competences such as Understanding of the fundamental principles of classical and modern physics. A working knowledge of the fundamentals of chemistry, biochemistry, anatomy and physiology. Understanding of how the fundamental sciences underpin applications in the biomedical area. Working knowledge of the use of common laboratory instruments used by physicists and in the biomedical environments. Ability to apply mathematical and computing tools to analyse, quantify and subsequently make decision upon a set of data. Ability to clearly communicate and explain problems and their solutions to peers and the broader community. An appreciation for the social and human aspects that prevail in biomedical environments such as a hospital. The Learner will know how to apply, modify and build upon these skills and competences to successfully conduct Experimental or theoretical research projects in academic or professional environments. Any professional or advanced technical activity based upon these skills and competences and more specifically in the biomedical environment.
Know How and Skill - Selectivity	The Learner will be able to solve numerical and qualitative problems in the broad areas of physics, as encapsulated in the IOP core of physics and indicated above, especially they should be able to summarise the key elements of the problem, develop an appropriate strategy, choose and apply this strategy to the problem in an iterative way and finally be able to judge the reliability and range of validity of their solution. The Learner will be able to make informed technical decisions or recommendations based on their knowledge of physics and biomedical sciences. The Learner will have the specific skills to plan, design or exercise technical or management functions in the development, testing or implementation of biomedical products, tools or processes.
Competence - Context	The Learner will be able to use his knowledge and advanced skills to responsibly carry out research or advanced professional activities in various biomedical environments such as academic institutions, private research institutes, industry, service companies, public or private hospitals. The range of skills and problem-solving methods acquired by the Learner will be transferable and applicable in any of biomedical contexts listed above.
Competence- Role	Upon completion of studies and training the Learner will be able to Understand the particular needs of a company/research institution/hospital as part of a development strategy as specified by the senior practitioners of these concerns and provide effective and adequate solutions under their guidance. Carry out the necessary technical and intellectual operations to successfully conduct a specified piece of research under the guidance of a peer.

Lead, instruct and manage the staff or groups of individuals with various specialisations who would be needed to conduct successfully the two points above.

Take on a management role in a technical or non-technical context.

Use their experience in group assignments and project work to foster team-working and management/leadership skills both in technical and non-technical situations.

Apply their analytical and mathematical skills to diverse problems/situations in the workplace.

Competence - Learning to Learn

Upon completion of studies and training the Learner will be able to

Adapt their level and breadth of knowledge to apply their skills and competences to new or unfamiliar work environments.

Generally take individual responsibility for their own learning being aware of the professional and/or ethical requirements that this may entail.

Assess their needs for ongoing professional development and training through appraisal of their working environment and other indicators and should be able to identify appropriate routes to meet these demands, whether through professional bodies, further study, mentoring etc.

Competence - Insight

Graduates will emerge from the programme as well-balanced individuals who are competent in their specialist technical area and who also possess good communication and interpersonal skills.

Graduates will be able to apply their knowledge and training to all aspects of work and the wider community.

Progression and Transfer

Learners may transfer to other degree programmes within and external to DCU, with the consent of the Physics with Biomedical Sciences programme board. Transfer to other Physics programme within DCU will be facilitated where possible up to the end of Year 1.

Graduates will be able to pursue postgraduate training at masters and doctoral level in a variety of areas including physics, biophysics, nanosciences and any other multidisciplinary area with an emphasis on biomedical applications, e.g., biosensors, biocomputing, etc...

Graduates will be able to pursue further training in areas such as management and business..

Articulation

Learners can enter the programme through the CAO by satisfying the programme entry requirements and points requirements from the Leaving Certificate examination or GCE A Level examination.

Learners can enter the programme from Year 1 of the Common Science/Science International or other equivalent science programme.

Learners can enter the programme as mature students who have the required background in technical and mathematical areas. This route may require an interview with the chairperson or other members of the programme board.

Learners can enter the programme with a FETAC Level 5 qualification (specifically a CASLT Applied Science-Laboratory Techniques qualification with the appropriate modules as specified in the DCU prospectus).

Learning Outcomes: A Personal Reflection
Lecturer, Education and Development (DIT), April 2009

My early higher education career (1980s onwards) involved me in the design of an inter-university, part-time modular Diploma (for a sector) which was supported by distance learning materials and an inter-departmental part-time modular BA (general). I was also involved in the first attempt at APEL (Accreditation of Prior Experiential Learning) for modules and programmes where external partners were involved as well as very significant numbers of staff in the sectors. These activities were challenging on many levels as they involved the political as well as the pedagogical. I am currently involved in working with academic staff and organisations on Web-Based Learning (WBL) and 'normal programmes'. If I consider just the pedagogical here I could make the following observations:

a. Before the NFQ it was difficult to have a mutually-informed conversation about the 'technologies' of learning outcomes, whether they were for individuals or sectors. University staff tended to operate from the received wisdom of tradition and practice without any explicit specifics other than the programme document templates used for programme validation by the NUI Senate. Academics had a great deal of freedom regarding how they taught and how they assessed, though examination papers etc. were generally submitted and approved at Department level. As Co-ordinator I could see wide ranges of practice regarding how well staff adhered to module descriptors and how some individual module teachers at distance from the Management Team might not get the idea of the unitary learning experience. Others had definite ideas of what should be learned regardless of the module objectives. Both of these issues were challenging for a modular degree where the learners experienced a degree of frustration with the lack of coherence and 'progression' among modules where they followed the list of contents/topics in the expectation of delivery as described. I shared their frustration as it is quite challenging to write objectives or learning outcomes and course content 'in advance' of meeting the actual learners and at a time distance from actual delivery.

b. Likewise it was quite frustrating to try to apply programme and module learning outcomes to APEL but we did a better job on that as students were given freedom to interpret and contextualise them in meaningful ways.

c. A larger frustration in writing learning outcomes for sectors is the new scholarship of curriculum design which is, to me, a little fundamentalist in its approach to 'alignment' – constructive, vertical and horizontal. This approach is extremely behaviourist as well as being contradictory to a 'student-centred' approach! It is now becoming obvious that these new technologies of multiple rubrics do not transfer well to sectoral learning outcomes and perhaps do not even serve school-leaver students well either.

d. On the idea of sectoral learning outcomes themselves I have mixed views. The worry is always of producing only for the labour market. The reality I have experienced is that academic staff who have actually worked in a sector have a tacit understanding of how to contextualise the language of learning outcomes on a sufficiently high level to be useful but not constraining.

e. I am currently involved in a Leonardo project on trying to look at sectoral learning outcomes in the air transport sector and the mechatronic sector across the EQF, EHEA and national frameworks. This should encourage us to think about generic learning outcomes as well as specific ones which make sense to sectors themselves.

f. In recent years I have been operating with our internal guide for writing learning outcomes which is a combination of the NFQ levels and the cognitive domain descriptors from Bloom's taxonomy while leaving out the other domains. Others are using SOLO etc. My experience is that the 'best' senior academic staff write learning outcomes from their 'accumulated wisdom' and look for compliance with regulations later ….I guess this is the application of expert knowledge in any case.

g. I am now working with staff who are designing advanced programmes for the workplace – mostly for sectors and in partnership with organisations/employers. This brings with it excitement and challenges – a major one being the uncritical adherence to the 'new technologies' of frameworks etc.….. I enjoy listening

to the quite different views of how higher education knowledge works and how knowledge works in sectors. It is refreshing when staff try to 'subvert' what has become 'bureaucracy' in relation to writing of programme documents.

h. However, overall I am greatly relieved to have the technologies of levels, descriptors, templates, learning outcomes etc. as they make conversations easier. However, as a very experienced academic I greatly resent being 'challenged' by very inexperienced members of panels regarding my 100% compliance with 'regulations' at the expense of good design and probably good outcomes! This really is the challenge for sectoral learning outcomes… an informed light touch is better than 'trials'!

SECTION C: SUPPORTING THE DESIGN OF DISCIPLINE-SPECIFIC LEARNING OUTCOMES

A summary follows of the issues raised, and views expressed, by the discipline-specific workshop groups at the joint university sector Framework Implementation Network / Bologna Experts colloquium on supporting the design of discipline-specific learning outcomes held February 2009, mentioned previously.[35]

Participants were divided into four workshop groups, one each for Business, English, Music and Physics. Each group was asked to consider and discuss the following questions:

(i) What would you describe as the learning characteristics necessary for graduates in your discipline?

(ii) How do these characteristics differ between the Honours Bachelor and Master's degrees?

(iii) Based on your response(s) to (i) above, how do you identify, in learning outcomes terms, the academic milestones in a programme?

(iv) Based on your group's discussion, what issues arise and/or what observations would your group make in relation to:

- *finding the optimum balance between discipline-specific and generic knowledge, skills and competences?*
- *working with the award-level descriptors and sub-strands of the NFQ?*

Introduction

A central question for the workshop groups was the nature of discipline-specific curriculum and the relationship between curriculum and learning characteristics (or graduate attributes). It was evident that there are clear differences in approach between the subjects in terms of identifying the 'core knowledge base' in a subject for a Bachelor programme. The Tuning group for Physics had found that the content of Bachelor programmes across Europe was very similar, reflecting a broad consensus about what constitutes 'essential' knowledge in the discipline and the primacy of that discipline-specific knowledge in the curriculum. This view was borne out in the discussions of the Physics workshop group. In the case of Music, it was found that certain core skills and competences would be considered essential in Bachelor programmes, though there may be considerable divergence between programmes in terms of emphasis (performance or academic) and repertoire. In English and Business Studies, the curriculum for a given degree programme may vary significantly from other programmes in the same subject and at the same level, even within a region.

Factors influencing the disciplinary knowledge-base for a given programme are varied and complex. They derive both from local specifics, such as the type of institution and its role in its locality and the number and research interests of individual members of the teaching staff, as well as from wider national historical and cultural contingencies. The requirements of external professional accrediting bodies are also a significant factor: formerly they tended to specify programme content, though increasingly they are specifying the graduate attributes required for professional registration, attributes which have to be expressed in terms of

[35] See Appendix 1 for a full list of speakers in the plenary sessions, workgroup facilitators and rapporteurs.

programme learning outcomes and achieved through stated learning outcomes for the constituent modules.

The workshop group discussions suggest that, for academics in each of the four disciplines selected, curriculum content was considered to be extremely important, but that the particular balance in learning characteristics or graduate attributes, between discipline-specific knowledge, discipline-specific skills and competences and 'generic' competences, might vary according to the essential nature of the discipline.

The discussions engaged in by the workshop groups are summarised below under discipline headings. Only the questions listed above that were discussed within the working groups are detailed below.

Business

On learning characteristics:
Participants in the workshop group recognised the core competences proposed by the Tuning report on Business and the QAA benchmark statement on Business and Management at the Honours Bachelor level, which are critical thinking, analysis and synthesis; communication and inter-personal skills, problem-solving and decision-making; numeracy and planning skills; and leadership ability. It was suggested that the toolkit of a business graduate was not a conceptual one. A further characteristic identified by participants in the workshop group was the ability of graduates to develop their own ethical standpoint when faced with conflicting frameworks. Ethical responsibility was considered to be an important part of business education at all levels.

On the difference in learning characteristics between the Honours Bachelor (level 8) and Masters (level 9) levels:
While clearly there is great diversity in the range of Business Studies programmes available at the Bachelor (NFQ level 8) and Masters (NFQ level 9) level, the Tuning work on Business found that there were significant similarities in European third-level institutions regarding programme aims and content and stated subject-specific competences in Bachelor programmes, but less homogeneity at the Master's level. NFQ Level 9 programmes tend to focus on particular aspects of business, such as human resources management, organisational management, international business, and so on, and on the application of theoretical and practice frameworks to specific 'real-life' situations and problems.

On the optimum balance between discipline-specific and generic knowledge, skills and competencies:
While a knowledge of the social sciences provides a foundation for business studies, the ability to communicate effectively through oral presentations and the ability to manage and lead a project were considered extremely important in a graduate's capacity to develop their learning in the field of business and beyond in the context of societal needs.

Ethical behaviour, analytical skills and critical thinking, developed within the context of business education, are increasingly being recognised as essential dimensions of business education

Common concerns and difficulties:
Difficulties identified during the workshop group discussion included how to represent and measure 'emotional intelligence' and 'ethical standpoint' in learning outcomes.

English

On learning characteristics:
Participants in the discussion in relation to English pointed to the enormous breadth in their discipline and 'changing notions about the literary canon'. This echoed what Professor Jay had referred to as "Englishes" in her plenary address about subject benchmarking in the UK. The different characteristics of degree programmes in English in the UK derive from different programme structures, different departmental/school/faculty structures and different disciplinary contexts. It was noted that, in identifying knowledge outcomes for the graduate, the benchmarking group had to take a 'broad brush' approach: graduates could be expected to be able to discuss a "substantial number of authors of different periods" which might include "the period before 1800". In this way, the subject benchmark statement for English seeks to accommodate curricular diversity rather than to prescribe a core curriculum.

Professor Jay also referred to emerging tensions between the traditional academic emphasis and the growing popularity of creative writing programmes, which further complicate the definition of knowledge-based outcomes. A common concern among UK academics is that the outcomes-based approach to higher education risks being driven by an employer's 'skills agenda' towards more uniform, generic outcomes.

Another feature of the study of English highlighted in discussion was the prominence – in some programmes, centrality - of literary theory or 'perspectives', such as feminist or postcolonial perspectives on texts. The requirement for students to recognise and work within these theoretical frameworks or 'modes of reading' was a distinct dimension to be represented in learning outcomes dealing with both knowledge and competences.

There was a widely-held view that most students entering third-level programmes in English in Ireland would have a good knowledge of at least some areas of the subject and a proficiency in reading prose, poetry and play texts. With regard to the learning characteristics of Cycle 1 (Bachelor) and NFQ level 7 and 8 graduates, the most important were considered to be: ability to recognise and apply different perspectives; analytical skills; the ability to engage in self-directed learning; and the ability to present well-structured narrative and argument in written and oral formats. Arguably, with the exception of the former, these could also be considered as generic skills. What is more difficult to locate and to define in terms of outcomes is the notion of personal creativity. This may be an expected graduate attribute in creative writing programmes, but what about the academic Honours Bachelors programme? Is it a standard of individual student performance that can only be recognised and measured in terms of marking criteria? Or is the ability, in the final 'honours' year, to undertake independent, though closely supervised, work (for example in an undergraduate research dissertation) an indication of a creative engagement with the subject which can be assessed and represented in terms of a learning outcome?

On the difference in learning characteristics between the Honours Bachelor (level 8) and Masters (level 9) levels:
There tends to be more homogeneity in the subject background of entrants to a Bachelor programme than to a Master's programme. The capacity for independent learning and "self-assembly of relevant material" is developed during the Bachelor programme, and is essential at the Master's level. The nature of Master's programmes (evidenced in the smaller credit volume) is of greater specificity, usually within one area of the subject. A Bachelor programme provides a broad subject map, but the student on the Master's programme must gauge the potential for pushing out the boundaries of the map. In other words, Bachelor students are concerned with acquiring a broad knowledge of the subject, and Masters students with achieving a deeper, more focused and creative engagement with their material.

On identifying, in terms of learning outcomes, the academic milestones in an Honours Bachelor programme:
Foundation knowledge and skills should be developed in the early stages of a programme and be demonstrable as learning outcomes, for example by the end of Year 1 in a full-time programme over three to four years. These outcomes might include the ability to: recognise and discuss certain genres and literary forms; develop a coherent argument in the form of a written essay; and analyse some texts.

Learning outcomes must be demonstrable and capable of being assessed, and should help students to see the objectives of a given level and understand how one level builds on the other. The final year of a programme should offer a 'vantage point' to encourage reflective synthesis.

On the optimum balance between discipline-specific and generic knowledge, skills and competencies:
In terms of an outcome such as critical ability, students of English should be able not only to critique a specific text, but also to critique texts in general.

Common concerns and difficulties:
Some general concerns and difficulties were voiced in the workshop group discussion: it was expressed that there may be difficulty for some in distinguishing between skills and competences, and in some instances, between competences and knowledge, as outlined in the NFQ architecture. It was perceived that an outcomes-based framework pre-supposes a staged linear cognitive development and may not reflect the reality of a student's development within a subject; and for some, learning outcomes remain prescriptive and reductive.

Music

On learning characteristics:
As with English, participants stressed the breadth of their discipline and the differing emphases of performance-based and musicology-based programmes. There is also a professional dimension to this subject in the areas of performance and/or teaching.

A broad knowledge of a range of musical styles and music from different periods was considered to be an essential element of any degree programme, but many of the required discipline-specific characteristics for graduates are essentially non-verbal competences: musical literacy, ability to analyse a musical score, listening skills, compositional technique, etc. Graduates of performance programmes also have to demonstrate specific instrumental competences and performance technique. Music technology – which has rapidly become a prominent area in the subject – requires very specific technical, as well as musical skills. Graduates of music education programmes are additionally expected to have knowledge in the history, philosophy and psychology of education, along with effective communication and inter-personal skills. Personal creativity is important in composition and in terms of expressivity in performance. The more generic skills, such as the ability to engage in self-directed learning and research, to present well-structured narrative and argument in written and oral formats, and to engage in socio-historical reflection are also important in Music degrees.

On the difference in learning characteristics between the Honours Bachelor (NFQ level 8) and Masters (NFQ level 9) levels:
The main difference is that at the Master's level there is greater specialisation within the subject.

On identifying, in terms of learning outcomes, the academic milestones in an Honours Bachelor Degree programme:
The student progresses from acquiring broadly-based knowledge and skills in the subject to developing more widely applicable or generic skills, though these are developed in and shaped by the subject context. The skills developed in the programme are essentially the same skills in both early and late stages, though the complexity increases over the course of the programme. There are recognisable points of transition during the programme in terms of a student's skills base.

Common concerns and difficulties:
Some general concerns and difficulties were voiced in the workshop group discussion: the question of how to represent tacit knowledge and non-verbal communication and expressivity in terms of learning outcomes was raised. It was expressed that learning outcomes represent a short-term piece-meal accountability that is detrimental to the educational process; and it was felt that an understanding of what the 'music profession' requires of music graduates is important in creating effective learning outcomes. However, the profession itself is very disparate and has no one representative body.

Physics

On learning characteristics:
As observed by both Tuning and the QAA benchmark statement for Physics, the Bachelors curriculum in Physics is more standardised in so far as it is based on a consensus about a significant volume of 'core' 'hard' discipline-specific knowledge that a graduate in the subject is expected to have acquired. As alluded to by Professor Jones in his presentation,[36] this can present a problem as knowledge advances and expands. By focusing on graduate attributes, rather than the detail of course content, it should be possible to avoid overloading the syllabus. An interesting finding by the Tuning group was that in continental Europe the subject had a more theoretical emphasis, whereas in the UK and Ireland the emphasis was more on experimental Physics, reflecting different intellectual traditions. The ability to solve scientific problems can be expressed in terms of discipline-specific competences, though problem-solving can also constitute a generic competence (see for example the common set of programme outcomes for the Honours Bachelor in Engineering degree (B.A.I.) used by all third-level institutions in Ireland, validated by Engineers Ireland).[37]

[36] Jones, G. (2009) *Supporting the design of discipline-specific learning outcomes: Experiences of the Tuning Group for Physics. Paper presented at the university sector Framework Implementation Network / Bologna Experts Colloquium, Supporting the Design of Discipline Specific Learning Outcomes, Dublin 6th Feb. 2009.* [Internet]. Available from: http://www.nfqnetwrok.ie/News/Default.76.html

[37] For further details, please see Engineers Ireland (2007) *Accreditation Criteria for Engineering Education Programmes.* Dublin: Engineers Ireland. P.15 [Internet]. Available from:
http://www.engineersireland.ie/media/engineersireland/services/Download%20the%20accreditation%20criteria%20(PDF,%20240kb).pdf

The highly detailed NFQ architecture of knowledge, skills and competences clearly posed problems for academics primarily concerned with the content and structure of curriculum. Discussion touched on the question of how to represent the NFQ categories of context, role and insight in relation to a graduate in Physics, and how to measure such outcomes. It was argued that context and role could be expressed in terms of competence in problem-solving, but insight, as with creativity in the context of the other subjects, was more difficult to define and represent in terms of learning outcomes. Perhaps the NFQ "insight" is what Professor Jones referred to as "deep understanding". The argument that the generality and perceived abstraction of NFQ terminology could only take on meaning in a specific disciplinary context resonated with members of this workshop group.

On identifying, in terms of learning outcomes, the academic milestones in an Honours Bachelor Degree (NFQ level 8) programme:
This question was not discussed in any great detail, but two points of note were made.

- At the Bachelor level in Physics, in common with other sciences, the curriculum is structured around the sequential building of discipline-specific knowledge; and
- It is hoped that the student will achieve a kind of breakthrough in their understanding of the subject, what Professor Jones referred to as 'deep understanding', something more than the simple accumulation of subject-specific knowledge, but developing out of a structured formation in the subject. This breakthrough may mark the passage between the Bachelor and Masters level.

On the optimum balance between discipline-specific and generic knowledge, skills and competencies:
As mentioned above, the knowledge base of the subject is growing all the time, and this presents a very real problem for defining the Bachelor curriculum: the tendency is to 'crowd' the syllabus rather than omit developments or core knowledge in certain aspects of the subject. Learning outcomes are a bridge between teaching and learning, and are therefore important in the design both of curricula and in teaching and assessment methodology.

Common concerns and difficulties:
Some general concerns and difficulties were voiced in the workshop group discussion: Concern was expressed about finding the appropriate balance, in an environment which requires learning outcomes on the one hand and promotes the 'knowledge economy' on the other, between discipline-specific knowledge and generic competences. Some considered that it is easier to define learning outcomes at the programme level than to assess the extent to which they are being achieved at the module level. It was felt that writing outcomes for programmes (i.e. single student cohorts) is more straightforward than writing learning outcomes for constituent modules, which may be taken by multiple cohorts, some on inter-disciplinary or multi-disciplinary programmes. The view was also expressed that learning outcomes statements do not assist in determining standards.

Learning outcomes: concerns and problems

As well as the dialogue that welcomes and supports the use of learning outcomes in higher education environments, the academic world has also voiced well-documented and widely-quoted concerns, many of which were voiced in the seminar discussions and case studies presented above. Other concerns often cited by critics of the outcomes-based approach to teaching and learning include:

(i) By focusing teaching on the achievement of specific outcomes for students, the use of learning outcomes militates against students interacting autonomously with the course material, with the result that intended learning outcomes may not be achieved, though other academically valid outcomes may emerge;

(ii) Stated learning outcomes encourage students to work only towards achieving the basic threshold assessment requirements associated with a programme of study (the tick-box mentality), and may also encourage a blame culture or litigious reaction from students who are deemed not to have achieved the stated intended outcomes;

(iii) Learning outcomes are not sufficiently sensitive to the differences and specific requirements of different disciplines;

(iv) It is merely a bureaucratic exercise reflecting a system which conceives of education as a commodity, promoted by managers who do not understand the academic process; an instrument of the contemporary 'quality culture' which appears concerned with the lowest common denominator;

(v) Learning outcomes necessarily lead to over-assessment of students; and

(vi) It represents a 'dumbing down' of higher education by devaluing discipline-specific knowledge in the curriculum and over-emphasising the acquisition of generic skills.

Learning outcomes: recognising the benefits

In partial response to these and similar concerns, a number of broad benefits in the use of a learning-outcomes approach can likewise be identified. Some of these are mentioned in the seminar discussions and case studies presented above. A number of others can be outlined as follows:

(i) Emphasis on what and how a student learns
It is often argued that one of the crucial benefits of the learning outcomes approach is, that in shifting the educational focus from teaching to learning, (without ignoring the requirements of the former but emphasising more clearly the impact of course design, teaching and assessment methodologies on the latter), students' engagement in active learning may be deepened such that they take more responsibility for their own learning. This "deep approach", as opposed to a "surface approach" to learning may "narrow the gap" between the more and the less academically able students (Biggs, 1999). [38]

(ii) Clarity and coherence in programme design
Learning outcomes are statements of the knowledge, competencies and orientations which are formally accredited to the student upon successful completion of a programme of study; they make clear what learning is designed to take place. A direct correspondence between module and programme outcomes, supported by the underlying alignment (Biggs''constructive alignment')[39] between content and teaching and assessment methods, leads to improved programme design. This clarity is valuable:

- for students, by contextualising their studies towards explicit outcomes;
- for teachers, by providing an articulated bridge between their teaching and assessment methods and their students' learning;
- for external examiners, by demonstrating how the providing academic department/school is attempting to ensure coherence between module and programme outcomes;
- for employers, by identifying key skills and competences they can expect from graduates;
- for professional bodies, by assuring that essential outcomes are being met;
- for providing institutions, by enabling them to align their programmes/awards at the appropriate level on qualifications frameworks, to provide assurance as to the coherence and integrity of their programmes, and to differentiate and promote the particular emphases of their programmes;
- for prospective students seeking to enter or re-enter formal education or transfer academic credit to another institution; and
- for the functioning of qualifications frameworks and to inform internal and external quality reviews.

(iii) The facilitation of pedagogical dialogue among teachers and learners in a discipline
Making clear how and what learning outcomes are relevant to what programmes requires a high degree

[38] Biggs, J. (1999) *Teaching for Quality Learning at University.* Buckingham: SRHE and Open University Press.

[39] *Ibid.*

of mutual adjustment, communication and interaction between teachers of a particular programme, or more usually, across a set of inter-related programmes which draw on common modules. The introduction of learning outcomes in an institution is best approached not as an administrative or paper exercise, but rather as an academic process in which the collective engagement of teachers within disciplines is supported both at the local discipline or school level and at institutional level. It is this discussion that locates ownership of the process with the teachers and programme designers, and that arguably represents the most useful and fertile dimension of the learning outcomes approach to programme and module development and delivery in higher education.

(iv) Quality and comparability

By specifying learning outcomes for programmes and modules within any discipline, it is also argued that an improved degree of coherence between curriculum content and teaching and assessment methodology can be achieved, resulting in higher quality and greater comparability between programmes of study in the different subject areas. This quality and comparability is in the interests both of the higher education system and of the individual learner.

Issues and challenges

As anyone who is involved in the process of introducing learning outcomes in a higher education institution will recognise, the adoption of the outcomes-based approach to teaching and learning right across the third-level sector poses a major challenge to academics because it requires "a paradigm change"[40] on their part – or, as it is often described, exchanging the traditional 'input-based' or teacher-based model of university education (which focuses on course content, duration, and the lecturer's aims and objectives) for one which focuses on students' learning. This is not simply a question of pedagogy. Many academics, at least initially, perceive learning outcomes as undermining the intrinsic value of knowledge, of inviting a shallow, mechanistic, quantitative response from students in place of the creative intellectual engagement, based on knowledge and broad reading, they seek to foster in their students and which they consider essential to the development of their subject.

There are many practical problems too to be overcome. For example, much of the literature on learning outcomes and qualifications frameworks focuses on designing programmes such that they are consistent with this or that, whereas – especially at the Bachelor level - in reality each institution will typically have a pre-existing and complex set of inter-connecting single subject, two-subject and multi-disciplinary degree programmes which have evolved in the most economical way possible to respond to the particular local context – institutional tradition, role and disciplinary base; profile and number of academic staff in the various disciplines; student demand and marketability of programmes; professional body or industrial partner requirements, etc. On the whole, these approaches have served students, universities and society as a whole very well.

Furthermore, identifying the programme may not be entirely straightforward. The Irish university system is characterised by a wide range of programmes, allowing for different approaches to framing their programme outcomes:

(a) single discipline;

(b) joint-honors;

(c) programmes comprising three disciplines one or two of which may be subsidiary;

(d) common entry programmes offering a number of different subject specialisms; and

(e) professional/vocational training programmes.

The subject-specific statements developed by the Tuning Project and the QAA provide a useful framework for single-discipline programmes. But, in the case of the popular joint honour or Arts degrees, should separate programme outcomes be written for every degree combination that includes French, or should subject outcomes be written for French and separately for each of the subject it combines with? Or should

[40] Adam, S. (2008) *Learning Outcomes, Current Developments in Europe: Update on the Issues and Applications of Learning Outcomes Associated with the Bologna Process*, Paper presented at UK Bologna seminar 1-2 July, Heriott-Wyatt University, Edinburgh

overarching programme outcomes be written for the Arts degree without reference to a particular subject? Different institutions may take a different approach, but the point to be made here is that it is a not insignificant practical issue on the ground.

Where programmes are accredited by professional bodies (or produce graduates for recognised but non-regulated professions) which have not themselves developed statements of discipline-specific knowledge and competences required in terms of graduate outcomes, writing learning outcomes is also problematic.

Another common concern about working with learning outcomes is the bureaucratic burden they represent. This presents a real challenge to institutions which are required to satisfy formal external accreditation and quality assurance requirements, while at the same time recognising and fostering the dynamic quality of teaching and learning.

Final reflections

Given that the outcomes-based approach to teaching and learning now underpins the formal architecture of higher education in Ireland and across Europe, if the learning-outcomes approach is to be genuinely useful within specific disciplines in terms of improving the design and coherence of study programmes and enhancing the effectiveness of the student's learning experience, then it is important that the concerns raised on the ground be addressed both at the institutional level and also systemically.

Disciplinary ownership and consensus are important features of agreeing and pursuing learning outcomes within particular fields. Some will be constrained by professional accreditation requirements, others less so. In either case, it seems important to engage in clear, open and positive dialogue within and between institutions about how learning outcomes can be identified and pursued in ways that reflect the diverse demands and values of a discipline. While it is the responsibility of the institution to devise a means of recording and publishing learning outcomes, ownership of learning outcomes must remain with the academic staff involved in the teaching, assessment and programme design. Learning outcomes can only be properly written by those who are involved in teaching, assessing and designing the programme of study, and, therefore, the process which the institution adopts, if it is to be effective over the medium–to-long term, must be one which engages all academic staff in a meaningful way and which supports pedagogical enquiry and development of good academic practice.

Experience in the Irish universities points to the usefulness of the following elements in the process of introducing learning outcomes:

- one or more persons charged with promoting or championing change at the institutional level;
- designation of individuals in the schools or academic units to lead and coordinate the process (typically directors of teaching and learning and programme directors or coordinators);
- use of local curriculum review and/or school/course committees to provide a forum for discussion and review in the disciplinary context; and
- central provision of information, advice and training for academic staff; the use of institutional templates to encourage consistency of approach and of presentation, and to facilitate the central collection of learning outcomes documentation for academic and quality improvement purposes.

Writing learning outcomes is an iterative process. The institutional process concerned with learning outcomes should allow for this. Effective procedures to review and update learning outcomes are needed at the local discipline/school and faculty/college level in the context of continual curriculum review and renewal.

A learning outcomes approach should not create a climate where students aim to achieve merely at the pass threshold level. Within disciplines consideration needs to be given to the pedagogies that encourage students to maximise their experiences and their performance. How this climate is created and sustained should be the subject of pedagogical strategy development within each discipline. Within each institution academics must be supported in acquiring the skills necessary for writing quality outcomes and closely aligning their teaching and assessment methods and assessment criteria to support the desired outcomes.

This has resource implications for the institutions.

Learning outcomes should be of practical utility for both teachers and students; they should provide an articulated framework for intellectual and academic enquiry that maximises students' engagement with the particular focus of the module and with the chosen subject(s) in general. How well they work may depend upon how well they are written.

The importance of incorporating emotional and personal outcomes into a learning outcomes approach is not insignificant and it can help to ensure that learning outcomes are interpreted and applied in a range of different ways depending on the discipline within which they are being applied. While certain outcomes essential to some disciplines may need to specify quite specific types of behavioural outcomes, learning outcomes do not need to be behaviouristic in order to be effective signals of learning expectations or characteristics within a particular discipline.

As is evidenced in the case studies, the NFQ level and award-type descriptors are not always central to the design of discipline-specific learning outcomes. Further articulation and understanding of the connection between these descriptors and those of the Bologna Framework is required in order to fully instate these as a primary reference point for institutions.

For individual academics who are required to adapt to the outcomes-based approach to teaching at third level, as well as for their institutions for which learning outcomes are becoming a key element in their internal quality assurance and quality improvement procedures, the effectiveness of the process through which learning outcomes are written will determine, at least in the short term, the extent to which the benefits of working with learning outcomes can be realised and any perceived shortcomings of the outcomes-based approach mitigated or avoided altogether. Arguably too, the extent to which concrete meaning can be given to the objectives of the National Framework of Qualifications will depend upon the quality of engagement of institutions and individual academics.

Ultimately, it is the learning outcomes for modules, not programmes, that are actually assessed, and so it is at this level that the integrity of the degree programme is guaranteed. Assessment of learning outcomes is the subject of Part three of this FIN report.

APPENDIX 1

JOINT UNIVERSITY SECTOR FRAMEWORK IMPLEMENTATION NETWORK AND BOLOGNA EXPERT COLLOQUIUM: SUPPORTING THE DESIGN OF DISCIPLINE-SPECIFIC LEARNING OUTCOMES

Hosted by the Higher Education Authority (HEA) and National Qualifications Authority of Ireland (NQAI) on Friday 6th February 2009, Alexander Hotel, Dublin 2.

Speakers at plenary session:

Professor John Scattergood, Chair of Framework Implementation Network
Introduction to the university-sector Framework Implementation Network and the discipline-specific learning outcomes working group

Professor Gareth Jones, Emeritus Professor and Senior Research Fellow in Physics, Imperial College London and Tuning Expert
Supporting the Design of Discipline-Specific Learning Outcomes: Experiences of the Tuning Group for Physics.

Professor Elisabeth Jay, Associate Dean (Academic) of the School of Arts and Humanities, Oxford Brookes University, and member of Review Group for the QAA Subject Benchmark Statement for English
Experiences from the QAA in the field of English.

Dr. Peter Cullen, Head of Standards, Research and Policy Development, Higher Education Training and Awards Council (HETAC)
The HETAC experience in setting award standards for the development of programmes for inclusion in the National Framework of Qualifications.

Dr. Norma Ryan, Director of Quality Promotion Unit, UCC and Bologna Expert
How can/should quality assurance feature in the design of discipline-specific learning outcomes?

Work Group Facilitators and Raporteurs:

Business Studies
Facilitator: Mr. Patrick McCabe, School of Business, Trinity College Dublin, and Irish member on Tuning in Business
Raporteur: Professor Bairbre Redmond, Deputy Registrar for Teaching and Learning, UCD and Bologna Expert

English
Facilitator: Professor Elisabeth Jay, Associate Dean (Academic) of the School of Arts and Humanities, Oxford Brookes University, and member of Review Group for the QAA Subject Benchmark Statement for English
Raporteur: Dr. Brendan McCormack, Registrar, IT Sligo and Bologna Expert.

Music
Facilitator: Professor Jan Smaczny, Hamilton Harty Professor of Music, Queens University Belfast
Raporteur: Ms. June Hosford, Director St. Nicholas Montessori College and Bologna Expert

Physics
Facilitator: Dr. Eamonn Cunningham, School of Physical Sciences, Dublin City University and Irish member of Tuning in Physics
Raporteur: Frank McMahon, Director of Academic Affair, Dublin Institute of Technology and Bologna Expert

APPENDIX 2: RESOURCES

1. Quality Assurance Agency (QAA) subject benchmark statements:

"Subject benchmark statements set out expectations about standards of degrees in a range of subject areas. They describe what gives a discipline its coherence and identity, and define what can be expected of a graduate in terms of the abilities and skills needed to develop understanding or competence in the subject."[41]

Business
http://qaa.ac.uk/academicinfrastructure/benchmark/statements/GeneralBusinessManagement.pdf

English
http://qaa.ac.uk/academicinfrastructure/benchmark/statements/English07.pdf

Music
http://qaa.ac.uk/academicinfrastructure/benchmark/statements/Music08.pdf

Physics
http://qaa.ac.uk/academicinfrastructure/benchmark/statements/Physics08.pdf

2. Tuning Project Subject Statements

Please see: Tuning Educational Structures (2007) *General Brochure Introduction* (p78). [Internet]: Available from: http://www.tuning.unideusto.org/tuningeu/

Business
http://tuning.unideusto.org/tuningeu/index.php?option=content&task=view&id=96&Itemid=123

Music
http://tuning.unideusto.org/tuningeu/index.php?option=content&task=view&id=194&Itemid=222

Physics
http://tuning.unideusto.org/tuningeu/index.php?option=content&task=view&id=114&Itemid=141

3. Guides from Irish Institutions

UCD
This guide provides examples of learning taxonomies which cover cognitive, affective and psychomotor domains:
http://www.ucd.ie/t4cms/taxonomies3.pdf

TCD
Scattergood, J. (2008) *Writing learning outcomes at programme and module level*. [Internet]. Available from:
https://www.tcd.ie/vpcao/bd/pdf/Scattergood_2008_Writing_Learning_Outcomes_at_Programme_and_Module_Levels.pdf

Module Descriptor Template:
https://www.tcd.ie/vp-cao/bd/moduledescriptortemplate.php

UCC
Kennedy, D. (2007) *Writing and Using Learning Outcomes: A Practical Guide*. Cork: UCC Quality Promotion Unit

NUI Galway:
This link provides access to a quick guide to writing module learning outcomes and a short video introduction to learning outcomes:
http://www.nuigalway.ie/celt/teaching_and_learning/outcomes.html

[41] Quality Assurance Agency for Higher Education (QAA) (2009) *Subject Benchmark Statements*. [Internet]. Available from: http://www.qaa.ac.uk/academicinfrastructure/benchmark/default.asp

4. Learning Taxonomies

This section provides links to resources on learning taxonomies which may be helpful in constructing learning outcomes at module level.

This resource provides a concise summary of learning taxonomies starting from Bloom's taxonomy (1956) which focussed mainly on the cognitive domain, and includes revisions to that model:
http://www.learningandteaching.info/learning/bloomtax.htm

This resource gives a more detailed overview of taxonomies starting with Bloom, and provides a good description of the taxonomies which deal with the affective domain (attitudes & beliefs) and psychomotor (skills). It could assist with the articulation of outcomes which address communication, IT skills, performance or language fluency for example:
http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm#bloom's%20taxonomy%20overview

SOLO (Structure of Observed Learning Outcomes) **Taxonomy:** This taxonomy developed by Biggs & Collins (1982) describes how students' outcomes of learning display increasing structural complexity. It is a useful taxonomy for defining learning outcomes, and also for assessing the level of student learning:
http://www.learningandteaching.info/learning/solo.htm

This link gives a general overview of the SOLO Taxonomy. It shows how using the SOLO Taxonomy can encourage the development of students' higher order critical skills:
http://www.tki.org.nz/r/assessment/atol_online/ppt/solo-taxonomy.ppt

This link from the University of Queensland illustrates the implications of SOLO for assessment design:
http://www.tedi.uq.edu.au/downloads/Biggs_Solo.pdf

This link from Southern Cross University provides guidance on how to align teaching and learning activities with outcomes using SOLO
http://www.scu.edu.au/services/tl/pathways/teaching/teaching4.html

Krathwohl's Taxonomy of Affective Domain

This is the best known taxonomy of the affective domain and it is based on the principle of internalisation, the lowest level being general awareness of an object to the highest level characterisation where a set of values have been internalised:
http://classweb.gmu.edu/ndabbagh/Resources/Resources2/krathstax.htm

5. Other

Adam, S. (2008) *Learning Outcomes Current Developments in Europe: Update on the Issues and Applications of Learning Outcomes Associated with the Bologna Process.* Presentation at Bologna Seminar at Herriot-Watt University, Edinburgh

Bergen, S. (2007) *Qualifications – Introduction to a concept. Council of Europe higher education series 6.* Strasbourg: Council of Europe.

Biggs, J. (1999) *Teaching for Quality Learning at University.* Buckingham: SRHE and Open University Press.