

## **Response to the QAA consultation on the revised Framework for Higher Education Qualifications (FHEQ), April 2008**

### **1. Background**

The Mathematics, Statistics and Operational Research (MSOR) community has been concerned for some time that the Descriptors for Bachelor's and Master's degrees elaborated in the 2001 FHEQ are over-ambitious, so far as degrees in MSOR are concerned. One of the places where this concern has been articulated recently is in the response by the Committee of Heads of Department of Mathematical Sciences in the UK (HoDoMS) to the consultation on qualifications descriptors which took place in the autumn of 2007. This response is available at <http://www.coventry.ac.uk/ec/HODOMS/> under 'Presentations and Documents'. Importantly, that response took its evidence from a consultation with Heads of Department undertaken by HoDoMS in 2007, comparing the 2001 FHEQ with the Dublin Descriptors.

In the present response we reiterate some of the points made before and suggest some possible resolutions of the difficulty. We also (in Section 4) set out some quotations from the consultation document in an attempt to answer the question: is some flexibility intended in the FHEQ, or is it intended to be prescriptive? It appears to us that, on the whole, the intention is that all degree programmes should fully match the Descriptors. It follows that Descriptors which are unrealistic in the considered professional judgement of the subject community, are also not useful.

### **2. The parts of FHEQ Descriptors which do not fit with MSOR**

The general problem here is that MSOR is a highly technical subject. There are many major areas of the subject where the 'frontier' and 'current literature' are simply inaccessible to Bachelor's and Master's students. Examples are number theory, partial differential equations, algebraic and differential geometry, topology and mathematical physics, but there are many others. The work which students undertake at Bachelor's and Master's level can realistically be described as being 'informed by' research at the frontier of the subject since the students are usually taught by people whose work is exactly there, and who know about current developments. But study, let alone critical appreciation, of articles which are genuinely at the frontier, is usually out of the question until some time into a PhD.

We emphasize, as in previous consultations, that *this is not a matter of academic standards. It is inherent in the discipline.*

Here we specify the parts of the Descriptors which cause a problem.

#### **2.1 Honours Degrees**

Notes are indicated by (a), (b), ... here

**Bachelor's degrees with honours are awarded to students who have demonstrated:**

- a systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at or informed by, the forefront of defined aspects of a discipline (a)
- an ability to deploy accurately established techniques of analysis and enquiry within a discipline
- conceptual understanding that enables the student:
  - to devise and sustain arguments, and/or to solve problems, using ideas and techniques, some of which are at the forefront of a discipline (b)
  - to describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in the discipline (c)
- an appreciation of the uncertainty, ambiguity and limits of knowledge
- the ability to manage their own learning, and to make use of scholarly reviews and primary sources (eg refereed research articles and/or original materials appropriate to the discipline). (d)

**Notes**

- (a) Because of the words ‘or informed by’, this statement is reasonable for MSOR.
- (b) As above, this is over-ambitious because of the ‘forefront of a discipline’ without qualification.
- (c) As above, commenting on current research is out of the question in many areas of MSOR.
- (d) Making use of *current* research articles may not be possible, though articles published decades or in some cases a century earlier may be appropriate.

**2.2 Master's Degrees**

**Master's degrees are awarded to students who have demonstrated:**

- a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study, or area of professional practice (a)
- a comprehensive understanding of techniques applicable to their own research or advanced scholarship
- originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline
- conceptual understanding that enables the student:
  - to evaluate critically current research and advanced scholarship in the discipline (b)
  - to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.

**Notes**

- (a) Again ‘or informed by’ makes this acceptable in MSOR.
- (b) As above, this is often beyond the reach of a Master's student in MSOR.

We note here some relevant statements from the MSOR Benchmark Statement (as amended and published 2007) and the proposed Annex regarding Integrated Master's Degrees.

*Benchmark Statement Section 2.8 [underlining here for emphasis]:* An important further source of diversity is, in many cases, the influence of the research and professional interests of the academic staff. While undergraduate programmes in MSOR are not expected to reach the frontiers of knowledge, it is a stimulating experience for a learner to be taught a subject by someone who is an active researcher or professional in the field. The choice of material presented in MSOR programmes, whilst mainly determined by its educational value, will nevertheless often be influenced in detail by the research and professional interests of the academic staff. Naturally these are not the major driving factors behind programme design, but they are of importance in providing a learning experience that is a vibrant and stimulating intellectual adventure.

*Proposed Annex on Integrated Master's Degrees, Paragraph A.15 [underlining here for emphasis]:* The Dublin Descriptors for master's degrees are immediately applicable. In particular, graduates from MMath programmes will have demonstrated knowledge and understanding that is founded upon, extends and enhances that typically associated with the bachelor's level, and that provides a basis for originality in developing and applying ideas, often within a research context. It is unrealistic to expect master's level programmes in MSOR necessarily to reach the frontiers of the subject.

### **3. Possible solutions**

#### **3.1 Dublin Descriptors**

Paragraph 10 of the draft FHEQ states:

The frameworks for higher education qualifications throughout the UK are designed to meet the expectations of the Bologna Declaration, and align with the Framework for Qualifications of the European Higher Education Area (FEHEA).

The Dublin Descriptors are explicitly mentioned in Bologna documents, e.g.

(a) from *A Framework for Qualifications of the EHEA*

[www.bologna-bergen2005.no/Docs/00-Main\\_doc/050218\\_QF\\_EHEA.pdf](http://www.bologna-bergen2005.no/Docs/00-Main_doc/050218_QF_EHEA.pdf)

In summarizing the proposal for an overarching framework for qualifications of the European Higher Education Area, it would be difficult to improve upon Mogens Berg's elegant summary in his presentation:

- > the EHEA framework should consist of three main cycles, with additional provision for a short cycle – or short higher education - within the first cycle;
- > the Dublin Descriptors are adopted as the cycle descriptors;

- > there are guidelines for the range of ECTS credits associated with the completion of each cycle,
- > responsibility for the maintenance and development of the framework rests with the Bologna Follow Up Group.

(b) from *Report from Bologna Working Group on Qualifications Frameworks*  
[www.mec.es/universidades/ees/files/2007-report-final.pdf](http://www.mec.es/universidades/ees/files/2007-report-final.pdf)

In order to avoid confusion by the existence of two overarching frameworks the working group recommends that the promotion of European higher education outside Europe should build on the overarching EHEA-framework, which includes the Dublin descriptors.

The Dublin Descriptors, according to the survey undertaken by HoDoMS in the autumn of 2007, are very much more acceptable to the MSOR community than the existing, or the proposed, Descriptors of the FHEQ. They have the great advantage, from our point of view, that they do not explicitly mention the forefront of the discipline, nor reading current research literature. They do make mention of 'research' but make it clear that this is to be taken in a very broad sense.

**The ideal solution from the point of view of the MSOR community would therefore be to adopt the Dublin Descriptors instead of the draft FHEQ.**

### **3.2 Alternatives**

If this proves to be impractical then we make the following suggestions.

(1) Whenever there is a statement about the 'forefront' or 'current research' this is made more realistic by the addition of appropriate words whose meaning is 'leading towards the forefront' or 'leading towards current research' or 'informed by current research'. We do appreciate that in some cases this will require some thought, for example:

conceptual understanding that enables the student to evaluate critically current research and advanced scholarship in the discipline.

would need to be reworded something like 'conceptual understanding that enables the student to evaluate critically appropriate research and advanced scholarship in the discipline'. Without a change of this kind the FHEQ will, as in the past, not apply to MSOR. A possible rewording is attached as an Appendix.

(2) The QAA could formally state that the FHEQ is intended to implement the Dublin Descriptors in the context of English, Welsh and Northern Irish HE. In effect this would mean that programmes meeting the Dublin Descriptors would also meet the QAA's criteria.

## **4. The extent to which the FHEQ is intended to be prescriptive**

Since the FHEQ is to some extent in conflict with the MSOR Benchmark Statement (as amended 2007) and the proposed Annex (2008) covering Integrated Masters' degrees, it may be useful to ask to what extent the FHEQ is intended to be a rigid rule which all degree programmes should obey. The following extracts are intended to clarify this so far as possible.

Paragraph 2 of the current consultation document (April 2008) contains the following:

Higher education providers may find it useful to refer to the FHEQ in their discussion with the main stakeholders in higher education (prospective students, parents, schools and employers) about the outcomes and attributes that each qualification represents.

The words 'may find it useful' suggest that the FHEQ are not intended to be prescriptive standards. Paragraph 4 similarly reads:

In particular, audit and review teams will wish to look at how higher education providers check the alignment between the academic standards of their awards and the levels referred to in the FHEQ. In this regard it should be regarded as a framework, not as a straightjacket.

Paragraph 54 reads:

**Qualification descriptors** are generic statements of the outcomes of study. Many academic programmes aim to develop general and specific skills. These are not explicitly addressed in the qualification descriptors, as many skills, and the extent to which they need to be developed, are discipline or profession specific. As such, they are addressed more appropriately in subject benchmark statements and individual programme specifications.

This suggests that subject benchmark statements have the final word on the extent to which skills are developed in degree programmes.

However, Paragraph 7 states:

Higher education providers should be able to demonstrate that all students commencing programmes after the start of the 2003-04 academic year would gain, on successful completion, qualifications that were awarded in accordance with this FHEQ.

This suggests that programmes must be in accordance with the FHEQ. Likewise Paragraphs 69 and 72 state:

The titles 'honours' (for example, bachelor's degree with honours), 'master' (for example, Master of Arts) and 'doctor' (for example, Doctor of Philosophy) should be used only for qualifications that meet, in full, the expectations of the qualification descriptors at level 6, level 7 and level 8, respectively.

The title 'degree' should be used only in respect of qualifications at levels 5, 6, 7 and 8, which are awarded for achievement, in full, of the outcomes set out in the relevant qualification descriptor.

The later extracts reproduced here lead us to believe that it is an important matter for the Descriptors in the FHEQ to be realistic for our discipline. We are fully convinced that the only people competent to judge such matters are professionals who spend their working lives in teaching, examining and research in MSOR.

## **Appendix**

### **A possible rewording of the Bachelor's and Master's Descriptors which makes them applicable to MSOR.**

#### **Bachelor's degrees with honours are awarded to students who have demonstrated:**

- a systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at or informed by, the forefront of defined aspects of a discipline
- an ability to deploy accurately established techniques of analysis and enquiry within a discipline
- conceptual understanding that enables the student:
  - to devise and sustain arguments, and/or to solve problems, using ideas and techniques, some of which are at, or reflect, the forefront of a discipline
  - to describe and comment upon particular aspects of research, or equivalent advanced scholarship, in the discipline
- an appreciation of the uncertainty, ambiguity and limits of knowledge
- the ability to manage their own learning, and, where appropriate to make use of scholarly reviews and primary sources (eg refereed research articles and/or original materials appropriate to the discipline).

#### **Master's degrees are awarded to students who have demonstrated:**

- a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study, or area of professional practice
- a comprehensive understanding of techniques applicable to their own research or advanced scholarship
- originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline
- conceptual understanding that enables the student:
  - to critically evaluate appropriate research or advanced scholarship in the discipline
  - to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.