Learning Outcomes, Degree Profiles, Tuning Project and Competences

Including a review of "Tuning Educational Structures in Europe. A Guide to Formulating Degree Programme Profiles – Including Programme Competences and Programme Learning Outcomes" Published by the Competences in Education and Recognition Project 2 (CoRe2)

Andy Gibbs
Declan Kennedy
Anthony Vickers



This paper outlines the background to the role of Learning Outcomes in the Bologna Process and discusses module learning outcomes, programme learning outcomes and programme specifications used to describe the intended learning outcomes of Higher Education programmes. The concept of constructive alignment is also discussed and exemplar material is provided to assist colleagues in higher education to implement constructive alignment in their programmes. A review is then undertaken of the above Tuning publication and serious concern is expressed regarding its content. The authors conclude that the confusion generated by this publication could seriously damage the considerable progress made in implementing the Bologna Process in many countries. The authors emphasise the fact that the Bologna Process can be fully implemented without reference to the Tuning Project.

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1. Introduction

The restructuring of the description of degree programmes

One of the key components of the modernisation of Higher Education within the European Higher Education Area (EHEA) is the restructuring of the description of degree programmes in terms of learning outcomes. This process has only recently begun in many countries within the EHEA and so it is important that clear guidance is given regarding this restructuring. The key role of learning outcomes in achieving many of the goals of the Bologna Process has been emphasised in the Bologna Process Stocktaking Report (Rauhvargers et al, 2009).

> "*The endorsement of learning outcomes by the Ministers was a significant development, since the 2007 stocktaking report identified implementation of learning outcomes as a precondition for achieving many of the goals of the Bologna Process by 2010. It remains equally true in 2009 that learning outcomes are central to the development of qualifications frameworks, systems for credit transfer and accumulation, the diploma supplement, recognition of prior learning and quality assurance.*
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> *In effect, the success of the Bologna Process depends on the comprehensive implementation of a learning outcomes approach in higher education. Learning outcomes are used in the Dublin descriptors, which are the basis of the three-cycle degree system. They also feature in the overarching framework of qualifications in the EHEA with which national frameworks are being aligned. They are an essential ingredient in quality assurance systems and in ECTS -compliant procedures for credit accumulation and transfer. They make transparency and recognition of qualifications more easily manageable. In short, learning outcomes encapsulate a learner-centred approach and shift the focus in higher education away from the traditional teacher-centred or institution-centred perspective*."
>
> Rauhvargers et al, p. 24 - 25, 2009

This journal has played an important role in helping third level institutions achieve many of the goals of the Bologna Process by implementing a learning outcomes approach to teaching and learning. Previous articles published in the *Bologna Handbook* have dealt with the important areas of Writing and Using Learning Outcomes (Kennedy et al, 2006) and also with the relationship between Learning Outcomes and Competences (Kennedy et al., 2009). Learning outcomes have been described in the Bologna Process Stocktaking Report 2007 as "critically important in the development of national qualification frameworks, systems for credit transfer and accumulation, the diploma supplement, recognition of prior learning and quality assurance" (Rauhvargers A et al., 2007).

This paper builds on the two previous publications (Kennedy et al., 2006 and 2009) in the areas of Learning Outcomes and Competences. In the following section, relevant sections of the ECTS Users' Guide are presented and some examples are given of good practice in the area of linking learning outcomes to teaching and learning activities and also to assessment. In addition, the process involved in writing Programme Learning Outcome as part of Degree Programme Profiles is discussed.

The subsequent section contains a review of a recent publication entitled "Tuning Educational Structures in Europe. A Guide to Formulating Degree Programme Profiles – Including Programme Competences and Programme Learning Outcomes", published by the Competences in Education and Recognition Project 2 (CoRe, 2011). In the final section serious concerns are expressed about the content of this Tuning publication.

2. Module Learning Outcomes, Programme Learning Outcomes and Degree Programme Profiles

The concept of learning outcomes

A key document in the restructuring of degree programme profiles is the ECTS Users' Guide, which was republished in 2009, taking forward many of its long-standing features but adding crucially the concept of learning outcomes. There are over one hundred and fifty uses of the phrase "learning outcomes" in this publication, demonstrating the importance of the concept of learning outcomes. Within the Users' Guide we find the international definition of learning outcomes: *"Learning outcomes are statements of what a student is expected to know, understand and/or be able to demonstrate after completion of a process of learning"*

The importance given to learning outcomes in the ECTS Users' Guide is also reflected in the Bologna Process Stocktaking Report (2009):

> "*Learning outcomes provide a common language that is used in the development of qualifications frameworks, which in turn have been found to improve the transparency, quality, accessibility, linkages and public awareness and labour market recognition of qualifications within a country and internationally. Such frameworks also establish interrelationships between qualifications for the purposes of recognising equivalence and for articulation and progression between qualifications*."
> Rauhvargers et al., 2009 p. 26

The "common language" of education

In short, learning outcomes have become the "common language" of education within the Bologna Process. ECTS may be thought of as the "common currency" of the Bologna Process. Students who achieve the learning outcomes of the modules within the overall programme are rewarded with ECTS credits.

The ECTS Users' Guide (p. 28) also provides very useful information regarding the ECTS Course Catalogue. The Course Catalogue has been one of the core building blocks of the ECTS system since its inception. Originally designed to give mobile students all the key information required in order to make an informed judgment regarding their period of mobility, it now stands as an exemplar regarding publicly available information provided by Higher Education Institutions. The information in the course catalogue is organised into three areas: information on the Institution, information on programmes and general information for students. The information on programmes is subdivided into two areas, general description and description of individual course units. The items listed under the General Description are as follows;

- qualification awarded
- level of qualification
- specific admission requirements
- specific arrangements for recognition of prior learning (formal, non-formal and informal)
- qualification requirements and regulations
- profile of the programme
- key learning outcomes
- occupational profiles of graduates with examples
- access to further studies
- course structure diagram with credits (60 per full-time academic year)
- examination regulations, assessment and grading
- graduation requirements
- mode of study (full-time, part-time, e-learning...)
- programme director or equivalent[1]

[1] ECTS Users' Guide, 2009

Note that the "key learning outcomes" form an integral part of the above list. These learning outcomes can be written for individual course units which are commonly called modules (i.e. **module learning outcomes**). In addition, learning outcomes must be written for the overall programme itself, i.e. **programme learning outcomes**. One of the essential points to consider when planning and designing a degree programme is that (i) the learning outcomes, (ii) the teaching and learning activities and (iii) the assessment must all be linked. The linking of these three areas is commonly referred to as **constructive alignment** (Biggs, 2003; Biggs, 2005; Morss and Murray, 2005).

Biggs points out that in a good teaching system, the method of teaching, learning activities and method of assessment are all co-ordinated to support student learning.

> *When there is alignment between what we want, how we teach and how we assess, teaching is likely to be much more effective than when it is not aligned).....Traditional transmission theories of teaching ignore alignment.* Biggs 2003a

Three basic areas for the constructive alignment of modules

It is clear from the above that there are three basic areas involved in the constructive alignment of any module:

1. Clearly defining the learning outcomes.

2. Selecting teaching and learning methods that are likely to ensure that the learning outcomes are achieved.

3. Assessing the student learning outcomes and checking to see how well they match with what was intended.

An example of constructive alignment for a module in science education is illustrated in Table 1 (Kennedy, 2007):

Learning outcomes	**Teaching and Learning Activities**	**Assessment 10 credit module Mark = 200**
Cognitive • Recognise and apply the basic principles of classroom management and discipline. • Identify the key characteristics of high quality science teaching. • Develop a comprehensive portfolio of lesson plans.	Lectures (12) Tutorials (6) Observation of classes (6) of experienced science teacher (mentor)	End of module exam Portfolio of lesson plans **(100 marks)**
Affective • Display a willingness to co-operate with members of teaching staff in their assigned school. • Participate successfully in Peer Assisted Learning project.	Participation in mentoring feedback sessions in school (4) Participation in 3 sessions of UCC Peer Assisted Learning (PAL) Programme Peer group presentation	Report from school mentor End of project report **(50 marks)**
Psychomotor • Demonstrate good classroom presentation skills. • Perform laboratory practical work in a safe and efficient manner.	Teaching practice 6 weeks @ 2 hours per week. Laboratory work	Supervision of teaching practice Assessment of teaching skills **(50 marks)**

Table 1 **Linking learning outcomes, teaching and learning activities and assessment for module ED2100 in BSc(Ed) programme**

Programme learning outcomes

In addition to writing module learning outcomes as shown in Table 1, it is also necessary to write programme learning outcomes. Programme learning outcomes describe the essential knowledge, skills and attitudes that it is intended that graduates of the programme (e.g. a four-year degree course) will be able to demonstrate. The rules for writing learning outcomes for programmes are the same as those for writing learning outcomes for modules. The general guidance in the literature is that there should be five to ten learning outcomes for a programme and that only the minimum number of outcomes considered essential should be included (Kennedy, 2007; Moon, 2002). Some examples of Programme Learning Outcomes for a BSc in Science Education degree are listed in Table 2.

On successful completion of this programme, students should be able to:

- Recognise and apply the basic principles of classroom management and discipline.
- Identify the key characteristics of excellent teaching in science.
- Develop comprehensive portfolios of lesson plans that are relevant to the science curricula in schools.
- Evaluate the various theories of Teaching and Learning and apply these theories to assist in the creation of effective and inspiring science lessons.
- Critically evaluate the effectiveness of their teaching of science in the second-level school system.
- Display a willingness to co-operate with members of the teaching staff in their assigned school.
- Foster an interest in science and a sense of enthusiasm for science subjects in their pupils.
- Synthesise the key components of laboratory organisation and management and perform laboratory work in a safe and efficient manner.
- Communicate effectively with the school community and with society at large in the area of science education.

Table 2 **Examples of Programme Learning Outcomes for the BSc(Ed) degree in University College Cork**

Guidelines for good practice

In recent years, considerable progress has been made in producing guidelines for good practice in writing programme specifications in countries such as Ireland and the UK. A programme specification is defined as a concise description of the intended learning outcomes of a Higher Education programme and the means by which the outcomes are achieved and demonstrated (Quality Assurance Agency, 2006). In the UK, for example, it is possible to find publicly available examples of programme specifications (see URLs 1 - 4 listed at the end of this article) which provide the core details of degree programmes. In addition, there is also a guide on writing programme specifications, published by the Quality Assurance Agency in the UK (URL 5).

In view of the considerable progress made by many countries in writing programme specifications, the authors now wish to express their serious concern regarding the contents of a recent publication "Tuning Educational Structures in Europe. A Guide to Formulating Degree Programme Profiles – Including Programme Competences and Programme Learning Outcomes" published in 2010 by the Competences in Education and Recognition Project 2 (CoRe 2). A review of this publication is presented in the following section.

3. A review of "Tuning Educational Structures in Europe. A Guide to Formulating Degree Programme Profiles – Including Programme Competences and Programme Learning Outcomes"

Formulating Degree Programme Profiles

This CoRe 2 Tuning Guide to formulating degree programme profiles is the result of cooperation between the Tuning network and some of the ENIC/NARICs (European Network of Information Centres in the European Region and National Academic Recognition and Information Centres). It is claimed that this publication offers clear guidance for formulating degree profiles. The approach includes defining key programme competences and writing what the authors suggest are good exemplars of learning outcomes at the level of the programme. The authors claim (p. 15) that the guide is "an innovative tool to assist in implementing the Bologna Process and the TUNING process at the level of higher education degree programmes". The publication is intended for all those involved in the design, delivery and assessment of higher education programmes and includes a template for preparing a degree profile. The following sections contain a review of this publication, providing a commentary on the contents, assessing the extent to which the publication meets its intended aims and commenting on its usefulness for its intended audience.

3.1 Clear guidance for formulating degree profiles?

The guidance in this publication suggests that to comply with the Bologna Process, Degree Programme Profiles must include programme competences drafted according to the Tuning guidelines contained in the publication. A failure to make it clear that the guidance represents just one approach towards formulating degree profiles gives an erroneous impression that Tuning and the Bologna process are one and the same, rather than Tuning being one approach intended to illuminate the process.

The publication directs readers towards further reading on Learning Outcomes, which may suggest that it builds on existing evidence and theory. However, within the approach and the guidance presented there is a lack of reference to the appropriate literature throughout the publication and this has given rise to numerous errors. Critically, there is an overall lack of clarity and blurring between the concepts of Competences and Learning Outcomes as exemplified by statements such as:

> "*Developing the key competences is the main objective of a programme. These competences are called Programme Competences (PCs) because they are the cornerstones of a programme. Their achievement is verified through references to Programme Learning Outcomes (PLOs).*" p. 22

The insistence on trying to make a case for including Programme Competences by linking Competences to Learning Outcomes is repeated throughout the publication and the authors fail to point out that it is possible to write Programme Learning Outcomes without any reference to Programme Competences.

In addition, the above insistence also undermines the second aim of the publication, i.e. writing good exemplars of learning outcomes at the level of the programme. The guidance is inconsistent with the examples provided and advice from the literature. For example, the guidance to "*Please list here the Learning Outcomes of the programme up to a total of 15 to 20"* (p. 42) ignores the fact that the general recommendation in the literature is that five to ten programme learning outcomes should be written. Furthermore the advice that "*The Degree Profile is a very brief document of around two pages*" (p. 15) conflicts with the examples given of degree profile documents, three of which are longer: History Example 2 (almost 4 pages), Nursing Example 1 (3 pages) and Physics Example 2 (almost 4 pages). In all examples there is a very high density of printed text.

The overall impact is that the guidance reduces clarity by introducing incompatible and unnecessary concepts, compounding this with contradictory examples.

3.2 Writing good learning outcomes at the level of the programme?

The international definition of learning outcomes

The international definition of learning outcomes found in the literature is that "Learning outcomes are statements of what a student is expected to know, understand and/or be able to demonstrate after completion of a process of learning" (ECTS Users' Guide 2005, 2009). However, the authors in the Tuning publication have invented their own definition of learning outcomes: "*A learning outcome is a measurable result of a learning experience which allows us to ascertain to which extent/level/standard a competence has been formed or enhanced"* (p. 21).

The Tuning definition of learning outcomes invented by the authors of the Tuning publication is flawed on a number of levels. Firstly, one cannot define learning outcomes in terms of the concept of competence since there is no agreement in the literature on the meaning of the term competence (Kennedy et al, 2009; Van der Klink and Boon, 2002; Winterton et al., 2005). This is analogous to building a house on

shifting sands. Secondly, due to the lack of clarity of the concept of competences, assessment of competences is very difficult unless one defines a particular competence in terms of a learning outcome, i.e. express the required competence using the vocabulary of learning outcomes. Equating the concept of competence with the concept of learning outcomes makes this step impossible. Thirdly, the Tuning definition of learning outcomes completely confuses the concept of learning outcomes with the assessment of learning outcomes. A learning outcome is simply a statement of what a student is expected to know, understand and/or be able to demonstrate after completion of a process of learning. A learning outcome is not a "measurable result". It is no more and no less than a simple statement. The **extent** to which the learning outcome is achieved is decided by the **assessment** of the learning outcome. This assessment of the learning outcomes is carried out as part of the process of constructive alignment as discussed earlier. This confusion is also reflected in the similarly incorrect statement that "*Learning outcomes state the extent and the level or standard of competence, including knowledge, that the student will develop*" (p. 19). This statement overlooks the fact that it is the **assessment** of the learning outcomes that indicates the extent to which the student has achieved the learning outcome, e.g. when the student is assessed on the achievement of a particular learning outcome, it is the examination mark obtained by the student that indicates the extent to which the learning outcome has been achieved.

What a student is expected to know, understand and demonstrate

In short, a learning outcome is simply a statement of what a student is expected to know, understand and/or be able to demonstrate after completion of a process of learning. It is no more and no less than this. The extent to which a student has achieved the learning outcome **and** the level at which the learning outcome has been achieved are indicated in the examination transcript and also in the overall description of the programme. In addition learning outcomes are simply a part of the overall description of a programme and it not correct to imply that learning outcomes are linked to particular levels in degree programmes.

Even beyond the flawed Tuning definition of learning outcomes, several erroneous statements are made which attempt to link competences and learning outcomes. It is claimed that "*they [Learning Outcomes] are statements of concrete and verifiable signs that witness/certify how the planned competences, including the required levels of knowledge, are being developed or acquired"* (p. 22). It is quite misleading to attempt to link learning outcomes to competences. The concept of learning outcomes is completely independent from the concept of competence. Achieving the learning outcomes of a programme or module are a step on the way to becoming competent (in the general sense of the word).

There is no international agreement on the meaning of the term Competence

Despite the assertions in this publication, learning outcomes cannot be defined in terms of Competence as there is no international agreement on the meaning of the term Competence. In fact, the authors admit (p. 37) that the definition of Competences used in this publication is different from the definition of Competence used in the European Qualifications Framework. The authors state "*As explained in Chapter 1, competences are understood in this guide in an encompassing way…… It is important to note that competences are not always understood this way. In the context of the EQF for LLL, for example, competences are distinguished from knowledge and skills and are described in terms of responsibility and autonomy"* (p. 36-37). The definition of competence used by the authors of the Tuning publication is significantly different from that used in the European Qualifications Framework for Lifelong Learning, where competence is defined in terms of responsibility and autonomy and transferring knowledge into practice. The crystallisation of the problem of using different definitions and interpretations of the concept of competence, underlines the inherent problem of trying to use the language of Competence in an international context. It simply does not work.

A lack of conceptual validity

The lack of conceptual validity becomes apparent in the guidance for writing programme learning outcomes given in the publication: "*While there are a variety of different ways of outlining a learning outcome, each one normally contains five key components*" (p. 44 - 45). This assertion is unsupported by any evidence from the literature. The only requirement for writing a learning outcome is that the sentence must begin with an active verb. The authors of the publication have "invented" other requirements. For example, there is NO requirement when writing a learning outcome that it should contain "*an indication of the standard or the level that is intended/achieved by the LO"* (p. 45). This information can only be deduced from the module and programme descriptions. The same learning outcome could be written for a child of 12 or an undergraduate student of 22. However, it is the information supplied with the learning outcomes (course topics, assessment, teaching methods, etc.) that gives an indication of the level of the learning outcome. Consequently, the assertion that "*learning outcomes are expressed in terms of the level of competence to be obtained by the learner"* (p. 55) is a very confusing statement. As explained above, learning outcomes may be written without any reference to levels of degree programmes since information about levels can only be deduced from the descriptions of the programme and of the modules within the programme.

Various levels of inconsistencies and misunderstandings

The examples provided in the publication reflect various levels of inconsistencies and misunderstandings. The example from the subject area of history (p. 46) begins with the phrase "*The student has demonstrated knowledge*". The key question, referring to the ECTS Users' Guide definition is "What must the student be able to DO in order to demonstrate that he or she has the knowledge. Thus, words such as

discuss, explain, analyse, render the outcome measurable through the process of assessment. The further example "*of a more complex PLO [Programme Learning Outcome] in the field of physics is the following: Ability to make measurements of physical quantities and to pursue an investigation by the design, execution and analysis of experiments, to compare results with existing knowledge and theories, and to draw conclusions (including degree of uncertainty)"* (p. 47) is a poor example of a programme learning outcome. It breaks the fundamental rules for writing programme learning outcomes in terms of the number of active verbs and in terms of its length. The example given should be broken down into its separate components with each component sentence beginning with an active verb. Finally, given that the only requirement for writing a learning outcome is that the sentence must begin with an active verb, the examples of programme learning outcomes on pages 67, 71, 75, 79, 88, 91/92 and 95 are incorrectly written as they do not begin with an active verb.

3.3 Innovative tool to assist in implementing an essential element of the Bologna Process?

A blurring of boundaries

Throughout the publication there is a blurring of the boundaries between the requirement of the Tuning Project and the requirements of the Bologna Process. Statements, such as "*In order to design a new Degree Programme, or to locate an existing one in a context understandable to others, reference must be made to general descriptors, national qualifications frameworks and TUNING Subject Area Reference Points"* (p. 23), are incorrect, since the Bologna Process does not require any compliance with Tuning. In addition, the statement that "*The degree profile is made up of seven entries including a general entry and the following sub-entries: Purpose, Characteristics, Employability and further education, Education Style, Programme Competences, List of Programme Learning Outcomes" (p. 20)* imply that one must write Programme Competences in order to be consistent with the Bologna Process. There is no requirement in the Bologna Process that one must write programme competences. This requirement would severely undermine the progress made to date in the Bologna Process.

The guidance that *"The PLOs (Programme Learning Outcomes) should align with the programme competences, not necessarily on a one to one basis, but overall"* (p. 43) is also incorrect. When writing Programme Learning Outcomes they must be aligned with the Teaching and Learning Activities and with the Assessment. Trying to align them with a set of Competences would be extremely difficult – if not impossible due to the lack of agreement internationally on the meaning of the term Competence. Hence, it is best to leave out Programme Competences completely.

An attempt to link learning outcomes to competences

As illustrated above, at frequent intervals throughout the publication there is an attempt to link learning outcomes to competences. Programme Competences are such an ill-defined and "fuzzy" concept (Van der Klink and Boon, 2002) that it is impossible to write these with any degree of clarity. Hence, Programme Learning Outcomes are widely used throughout the world as the international language to describe degree programmes. In practice, viewing competencies and learning outcomes as two separate concepts may lead to a realisation that programmes and modules can be adequately described and fully consistent with the Bologna Process when written in terms of learning outcomes **without** any reference to competences.

3.4 Intended for all those involved in the design, delivery and assessment of higher education programmes?

Competence an ill-defined concept

There is no point in asking staff members of faculty to write Programme Competences since there is no agreement in the literature on what is meant by the term competence. It certainly would **not** be possible to run training courses for staff in writing programme competences because there are no rules for writing competences. Hence, no quality assurance system can be built around competences since one cannot assess such an ill-defined concept. On the other hand, many countries have organised Bologna workshops at international, national and local levels to write programme learning outcomes and module learning outcomes. Huge progress has been made in this area as evidenced by the very large number of university programmes throughout the European Higher Education area in which these programmes are expressed in terms of learning outcomes.

4. Conclusions and Recommendations

This paper has discussed the concepts of module learning outcomes and programme learning outcomes in the context of the general requirements of degree programme profiles as highlighted in the ECTS Users' Guide. Reference has also been made to exemplar material in the area of programme specifications in the UK and Ireland. These are provided as examples of one methodology and are not intended as blueprints for other countries.

Considerable progress is being made

It is clear that considerable progress is being made in implementing a learning outcomes approach to teaching and learning throughout the EHEA. The level of progress can be gauged from the Bologna Process Stocktaking Report 2009 (Rauhvargers et al., 2009) and also from the work of the European Centre for the Development of Vocational

Training (CEDEFOP, 2009). This report studied the shift towards learning outcomes in European education policies and practice in the thirty two countries taking part in the Education and Training 2010 process. The study found that there is broad agreement among the various partners in education that learning outcomes can improve access to and progression within education, training and lifelong learning. The situation is nicely summarised as follows:

> *"The potential and widespread significance of learning outcomes is only just beginning to be realised. Their introduction is designed to facilitate the fundamental reform of existing qualifications and the creation of new ones fit for the 21st century. It is arguable that the main end product of the Bologna reforms is better qualifications based on learning outcomes and not just new educational structures."* CEDEFOP, 2009 p. 82

There are still significant challenges facing many countries

It is also important to point out that there are still significant challenges facing many countries in adopting a learning outcomes approach to teaching and learning. Concern on the slow pace of change in many of these countries is clearly expressed in the Bologna Process Stocktaking Report 2009:

> "*In conclusion, it is abundantly clear both from the 2009 stocktaking and from other international studies that effective implementation of learning outcomes is linked to successful achievement of major Bologna Process goals, including in particular the development of national qualifications frameworks integrating the three-cycle degree system; credit transfer and accumulation; recognition of qualifications and of prior learning, and provision of flexible learning paths as part of the lifelong learning continuum. Conversely, the slow movement of many countries towards adopting a learning outcomes approach is an obstacle to progress on these other important goals. This represents a significant challenge for ministries and higher education institutions over the coming years. Many countries are still in the early stages of developing and implementing learning outcomes and qualifications frameworks. The support that the Bologna Process provides for collective efforts and sharing of practice among peers will be especially important as the work progresses in these countries*."
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> Rauhvargers et al., 2009 pp.27 - 28

We support the recommendation of sharing of practice among peers and we welcome the publishing and dissemination of all materials that assist in the sharing of good practice among all those involved in the Bologna Process. It is in this context that we have reviewed the recent Tuning publication on Formulating Degree Programme Profiles. The claim that this publication is "an innovative tool to assist in implementing the Bologna Process and the Tuning process at the level of higher

education degree programmes" (CoRe 2011) clearly cannot be sustained. Moreover, it is clearly not the case that in order to implement the Bologna Process, the Tuning Process must also be implemented.

Due to the numerous errors and misunderstandings evident in the Tuning publication, there is a real danger that it will cause confusion among teaching staff in our universities. In addition, the confusion generated by this document could seriously damage the considerable progress made in implementing the Bologna Process in many countries. It is unfortunate that the publication completely ignores the wealth of literature written on the topic of learning outcomes and programme description. (Kennedy et al., 2006; Moon, 2002, Morse and Murray, 2005; Rauhvargers et al, 2007 and 2009). In addition, those seeking further exemplar materials on these issues can find numerous examples of good practice regarding writing programme descriptions, programme learning outcomes and module learning outcomes available in online university catalogues. It is important to stress that it is perfectly acceptable to write programme descriptions and Programme Learning Outcomes that are fully compliant with the Bologna Process without any reference to writing Programme Competences. Equally important is the fact that the Bologna Process can be fully implemented without reference to the Tuning project.

Opening up the debate and alerting Bologna experts to the challenges that lay ahead

We conclude that this publication does not meet its intended aims and we would not endorse the guidance provided. We suggest that this is a Tuning publication which is out of tune and needs immediate re-Tuning! On the positive side, it opens up the debate in this area and alerts Bologna Experts to the challenges that lay ahead in ensuring high standards of quality assurance.

As an overall conclusion we urge Higher Education Institutions to provide clear information on their degree programmes in line with the structure presented within the ECTS Users' Guide, as well as to use the learning outcomes approach both at degree programme level and at course unit (module) level. We also encourage Higher Education Institutions to adopt the learning outcome methodology in its complete form using the principle of constructive alignment.

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Biographies:

Andy Gibbs is a UK Bologna Expert with a background in Nursing and Education who graduated from Manchester University with a Bachelor's degree in Nursing and Education in 1991 and a Masters degree from Edinburgh Napier University in International Nursing and Education. He was Head of School of Community Health at Edinburgh Napier University for ten years before becoming involved with International Relations. He has undertaken a number of national and European projects related to Qualifications Frameworks, Learning Outcomes and ECTS, advising Ministries and Universities in the EU and beyond. He has participated in numerous ENQA and EUA evaluations.

Contact: a.gibbs@napier.ac.uk

Declan Kennedy graduated from University College Cork Ireland with a BSc in Chemistry, a Postgraduate Diploma in Education and an MSc in X-ray crystallography. He subsequently studied at the University of York, England and graduated with a Masters Degree in Education and a PhD in Education. He spent over 20 years teaching science at secondary school level, was appointed lecturer in science education at University College Cork in 1998 and was promoted to senior lecturer in 2006. He is mainly involved in teacher training and he is also a lecturer on the Postgraduate Certificate/Diploma in Teaching and Learning in Higher Education where his specialist topic is the area of Learning Outcomes, Competences, Assessment and Research Methods in Education. He is very involved in helping colleagues in Ireland and abroad with various aspects of the implementation of the Bologna Process. He is the author of the book "Writing and using Learning Outcomes – A Practical Guide" which to date has been translated into ten languages.

Contact: d.kennedy@ucc.ie

Dr. Anthony Vickers graduated from Lancaster University with a BSc in Physics and a PhD in Physics in 1984. He worked as a research associate in the Physics Department at Lancaster University until 1985 when he moved to the University of Essex as a Physics Lecturer.

He has worked at the University of Essex for 25 years now as a Reader in the School of Computer Science and Electronic Engineering. His current scientific research area is Terahertz technology for the study of biological systems.

Dr. Vickers is also a keen pedagogist, with his main interests in the use of technology for educational purposes and the holistic approach to the use of learning outcomes. He currently teaches modules in professional development, ARM processors, and is module director for final year projects for Bachelor degree students in his School. He has worked at the University of Essex for 25 years now as a Reader in the School of Computer Science and Electronic Engineering. His current scientific research area is Terahertz technology for the study of biological systems. Dr. Vickers is also a keen pedagogist, with his main interests in the use of technology for educational purposes and the holistic approach to the use of learning outcomes. He currently teaches modules in professional development, ARM processors, and is module director for final year projects for Bachelor degree students in his School.

Dr. Vickers has worked within the Erasmus programme since 1987. He has worked as a study abroad officer, an Institutional co-ordinator and is currently the Chair of the University of Essex Student Mobility Panel. Nationally he has been an ECTS and Diploma Supplement Counsellor since the late 1990s and has been one of the UK Bologna Promoters (now Experts) since their creation. He has worked in many countries within the European Higher Education Area giving presentations, training seminars and undertaking evaluations on topics such as ECTS, The Bologna Process, and Learning Outcomes. Dr. Vickers has developed his own training programme (LOLA) regarding Learning Outcomes focussing on the holistic approach to implementing learning outcomes through identifying Learning Outcomes, the student Learning, and the Assessment of the learning outcomes.

Contact: vicka@essex.ac.uk