Making the Connections: Learning Outcomes, Aims, Objectives, Generic Descriptors, Qualification Frameworks, ECTS credits and Quality Assurance.

Presentation 1
Vienna 25 April 2023
How are learning outcomes perceived, transmitted, and implemented in daily practice of Higher Education Institutions? .

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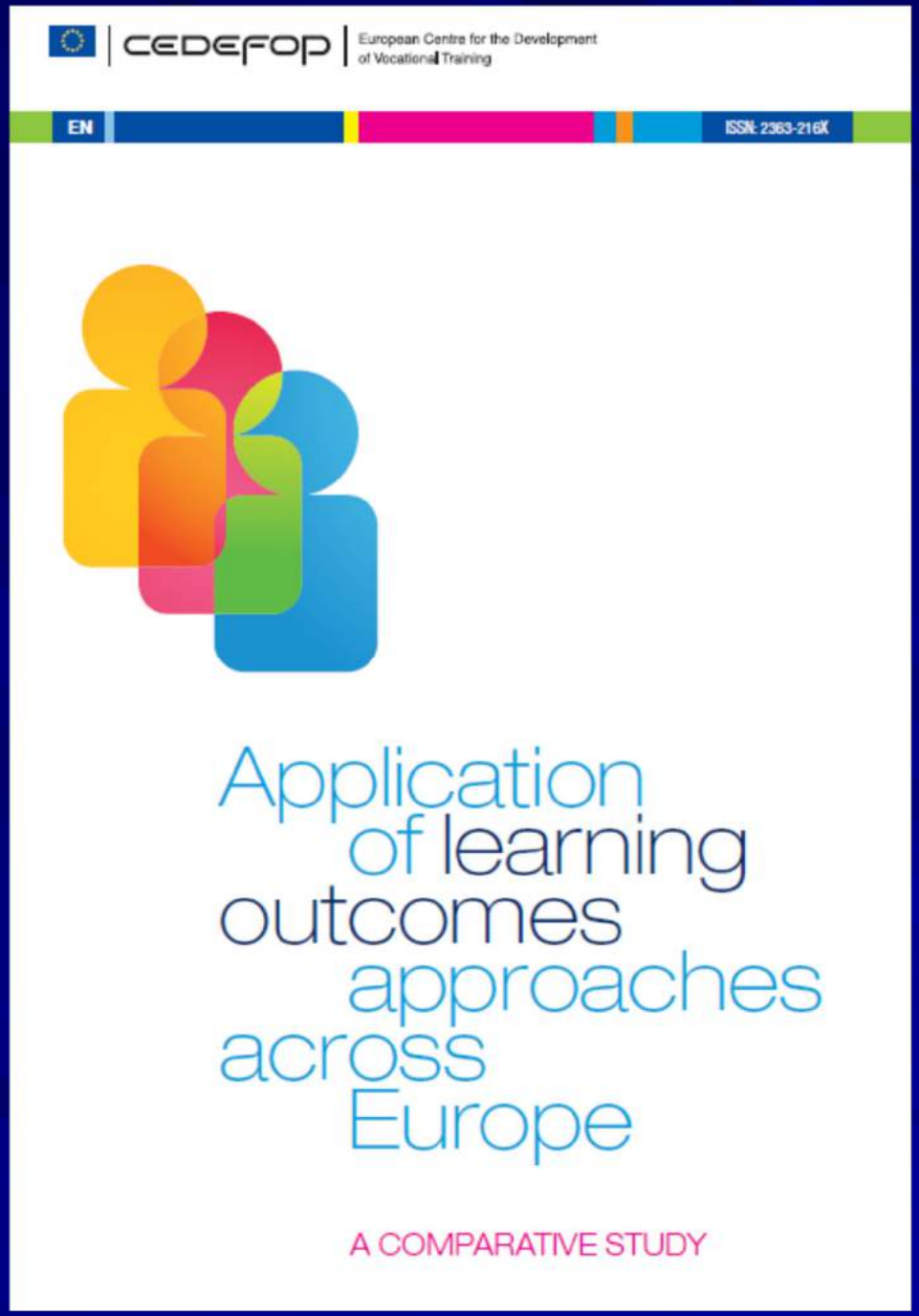
University College Cork, Ireland.

1. International trends in Higher Education.
2. Clarifying the meaning of key terminology.
3. Examining the relationship between aims, objectives, learning outcomes, generic descriptors, qualification frameworks, ECTS credits and competences.
4. Teaching, learning and assessment within a Learning outcomes Framework.

International Trends in Higher Education

- Introduction of learning outcomes framework.
- Moving from “lecturing” to “teaching”
- Transparency of assessment methods – clearly articulated assessment criteria.
- Movement away from just terminal examination to a wider range of assessment methods, e.g. continuous assessment.
- Online course materials.
- Enhanced quality assurance systems.
- Modularisation.
- Semesterisation.


CEDEFOP
European Centre for the Development of Vocational Training
EN
ISSN: 2363-216X
Application of learning outcomes approaches across Europe
A COMPARATIVE STUDY

CEDEFOP

This Cedefop reference publication maps and analyses the shift to learning outcomes in education and training policies and practices across Europe.

Bringing evidence on the development of national policies from 33 countries, the study examines progress made in recent years (2009 onwards) and attempts to capture the character of political reform at national, institution and local levels. Ten case studies in nine countries produce new empirical evidence on the presence of learning outcomes approaches in the design and delivery of programmes and curricula for teacher education programmes.

Based on extensive literature review, interviews conducted with various stakeholders in curriculum policy-making and practice, focus groups and on-site visits, findings show how learning outcomes approaches increasingly feature as catalysts for policy and practical reform, influencing education and training practice. This publication also reveals the diversity of uses of the learning outcomes approaches being applied and highlights the complexity of implementing learning-outcomes-centred policies and developing appropriate strategies at both systemic and subsystemic levels.

What are learning outcomes?

- Learning Outcomes are specific statements of what students should know and be able to do as a result of learning (Morss and Murray, 2005)
- A learning outcome is “a statement of what a learner knows, understands and is able to do on completion of a learning process” (European Qualifiations Framework)
- Learning outcomes are explicit statements of what we want our students to know, understand or to be able to do as a result of completing our courses. (Univ. New South Wales, Australia)
- “Learning outcomes are statements that specify what learners will know or be able to do as a result of a learning activity. Outcomes are usually expressed as knowledge, skills or attitudes”. (American Association of Law Libraries).
- Learning outcomes are an explicit description of what a learner should know, understand and be able to do as a result of learning. (Learning and Teaching Institute, Sheffield Hallam University)
- Learning outcomes describe what a learner is expected to know, understand and be able to do after successful completion of a process of learning. (ECTS Users Guide, 2009).

Working Definition

Learning outcomes are statements of what a student should know, understand and be able to demonstrate after completion of a process of learning.

- The learning activity could be, for example, a lecture, a module (short course), workshop or an entire programme.
- Learning outcomes must not simply be a “wish list” of what a student is capable of doing on completion of the learning activity.
- Learning outcomes must be simply and clearly described.
- Learning outcomes must be capable of being validly assessed.

Aims and Objectives

- The Aim of a programme is a broad general statement of teaching intention, i.e. it indicates what the teacher intends to cover in a programme or module or learning activity.
- Example of aim: To give students an introduction to organic chemistry.
- In some countries “Aim” is called a “goal”.
- The objective of a module or lecture is a specific statement of teaching intention, i.e. it indicates one of the specific areas that the teacher intends to cover.
- “My aim is to lose weight. My objective is to lose one kg per week”. My aim is to travel to Australia. My first objective is to get as far as Dubai”.
- Objectives tend to be specific and measurable.

Aims and Objectives

- Examples of objectives:

1. To give students an appreciation of the unique nature of carbon and its ability to bond to other carbon atoms.
2. To give students an understanding of the concept of hybridisation.
3. To ensure that students know some characteristic properties of alkanes and alcohols.
4. To make students familiar with a range of families of organic compounds: alkanes, alcohols, carboxylic acids and esters.

- Aims are general and long term and refer to a series of lectures or unit of work (module).
- Objectives are more specific and short term.

The language of aims and objectives

- To give students an understanding of …..
- To give students an appreciation of…..
- To make students familiar with……
- To ensure that students know…….
- To enable students to experience …..
- To encourage students to …….
- To provide students with the opportunity to…….

etc.

Examples of Aims

- To give students an introduction to current theories and practice in the area of science education.
- To give students an understanding of what constitutes good science teaching.
- To give students an appreciation of the contribution that science education can make to the ovearall education of young people
- To help students develop the knowledge and professional skills teach science in the secondary school.
- To give students a critical understanding of current debates and issues relating to science education.
- To provide students with the opportunity to develop their critical thinking skills to enable them to engage in highly effective science teaching in schools.
- To assist students to develop as reflective practitioners with an understanding of research methods in education and how these can inform practice in the classroom.

From the definition of Learning Outcome we see:

- Emphasis on the student – Student Centred Approach to Teaching and Learning.
- Emphasis on the student's ability to do something.

Teacher-Centred approach to Teaching and Learning

Student Centred Approach to Teaching and Learning.

- Focus on teaching – aims and objectives and use of terms such as *know, understand, be familiar with.*

- Outcomes: Focus on what we want the student to be able to do - use of action verbs such as define, list, name, recall, analyse, calculate, design, etc.

• Aims: Give broad purpose or general intention of the programme.
• Objectives: Information about what the teaching of the module hopes to achieve.
• Learning outcomes are not designed to replace the traditional way of describing teaching and learning but to supplement it.

Action Verbs

- Learning outcomes are statements of what a student should know, understand and be able to demonstrate or DO after completion of a process of learning .
- Since they are statements describing observable behaviour, we must use action verbs when writing learning outcomes.

What is an action verb?

- An action verb describes the activity that the subject of a sentence is doing,

e.g. John paints the garage. *Paints* is the action verb.

Mary describes the scenery. *Describes* is the action verb.

Sean solves the problem. *Solves* is the action verb.

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SUMMARY GUIDELINES FOR WRITING LEARNING OUTCOMES

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Learning Enhancement

UCC Centre for the Integration of Research, Teaching and Learning

As part of the Bologna Process reforms, all modules and programmes throughout the European Higher Education Area are described in terms of Learning Outcomes. Learning outcomes are statements of what a student should know, understand and be able to demonstrate after completion of a process of learning.

Learning Outcomes are described in relation to three domains of learning, i.e. cognitive (knowledge-based), affective (attitudes and values) and psychomotor (practical skills). Most learning outcomes are written in the cognitive domain but, depending on the subject area being studied, learning outcomes may also be written in the affective and psychomotor domains.

Writing Learning Outcomes

Bloom's taxonomy (Fig.1) is helpful when writing Learning Outcomes in the cognitive domain. Ranging from the lower to the higher order thinking skills, Fig. 2 provides some suggested action verbs.

When writing Learning Outcomes:

1. Always use action verbs. Think about completing the sentence *At the end of this module students should be able to:*
2. Keep the sentence short. More than one action verb can be used in the same sentence.
3. Try to ensure that module Learning Outcomes range across all levels of Bloom's Taxonomy in each year of the programme.

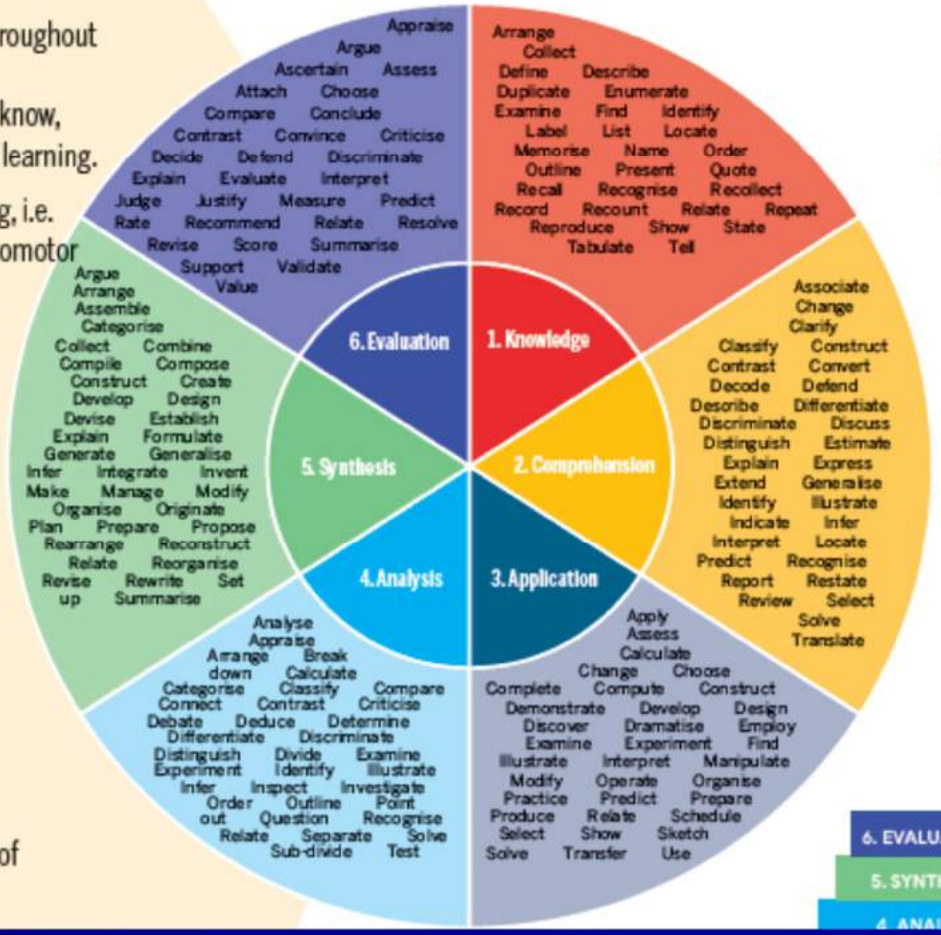


Fig. 2 Action verbs in the cognitive domain

Stative verbs

The opposite type of verb to action verbs are stative verbs. Stative verbs describe a state. Some examples of stative verbs are:

- Know
- Understand
- Appreciate
- Believe

Whilst action verbs are commonly used in writing learning outcomes and examination questions, stative verbs must never be used in writing learning outcomes or examination questions.

QUALITY ASSURANCE

Three Key Areas for Quality Assurance within a Learning Outcomes Framework

1. Learning Outcomes must be written according to guidelines in the literature.
2. Learning outcomes must be written at module level and at programme level.
3. Learning outcomes must be linked to

   (a) Teaching and Learning activities and

   (b) Assessment.

Key Questions for Quality Assurance

- What training has been given to staff to enable them to write learning outcomes?
- What systems are in place to ensure that the learning outcomes written meet the criteria laid down in the literature?
- What systems are in place to enable the staff to revise and update the learning outcomes written?
- What systems are in place to help staff link the learning outcomes to their Teaching and Learning Activities and to their Assessment?

Why are Learning Outcomes at the heart of the Bologna Process?

Focus on Learning Outcomes – Bologna

- Bologna Agreement signed in Bologna, Italy in 1999 by 29 countries. A total of 48 countries have now signed up to this agreement.
- The overall aim of the Bologna Agreement is to improve the efficiency and effectiveness of higher education in Europe in terms of academic standards of degrees and quality assurance standards.
- One of the main features of this process is the need to improve the traditional ways of describing qualifications and qualification structures.

Bologna, Italy (1999)

The 10 Action Lines of Bologna Process

1. Adoption of a system of easily readable and comparable degrees
2. Adoption of a system based on three cycles
3. Establishment of a system of credits
4. Promotion of mobility
5. Promotion of European co-operation in quality assurance
6. Promotion of the European dimension in Higher education
7. Focus on Lifelong Learning
8. Inclusion of Higher Education Institutions and students
9. Promotion of the attractiveness of the European Higher Education Area
10. Doctoral Studies and the links between the European Higher education Area and the European Research Area

Learning Outcomes Framework in Bologna Process

- ‘Ministers encourage the member States to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, **learning outcomes**, competences and profile. They also undertake to elaborate an overarching framework of qualifications for the European Higher Education Area.’

  Berlin Communique 2003

- ‘We adopt the overarching framework for qualifications in the EHEA, comprising three cycles (including, within national contexts, the possibility of intermediate qualifications), generic descriptors for each cycle based on **learning outcomes** and competences, and credit ranges in the first and second cycles.’

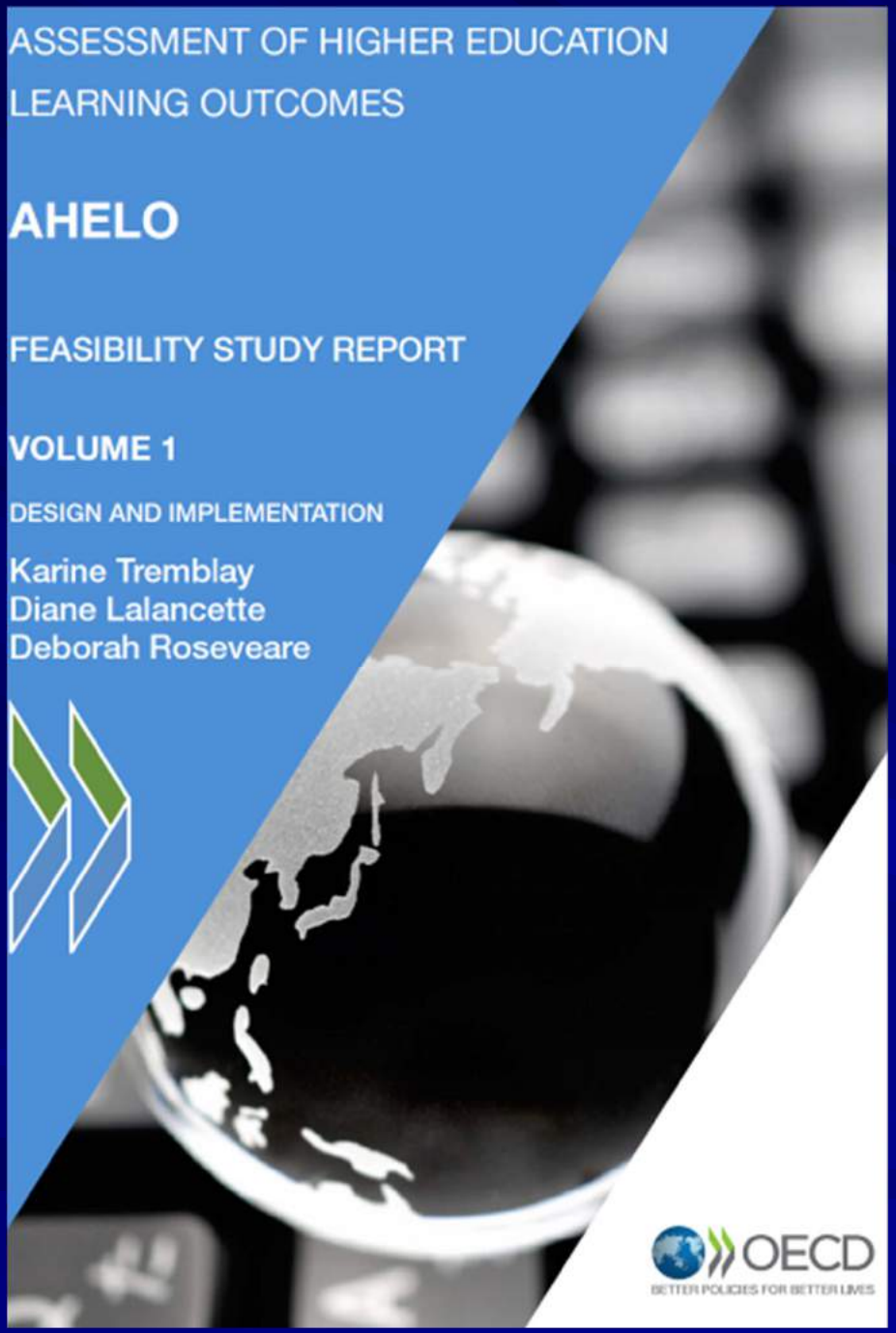
  Bergen Communique 2005

- ‘We underline the importance of curricula reform leading to qualifications better suited both to the needs of the labour market and to further study. Efforts should concentrate in future on removing barriers to access and progression between cycles and on proper implementation of ECTS based on **learning outcomes** and student workload.’
- ‘Qualifications frameworks are important instruments in achieving comparability and transparency within the EHEA and facilitating the movement of learners within, as well as between, higher education systems. They should also help HEIs to develop modules and study programmes based on **learning outcomes** and credits, and improve the recognition of qualifications as well as all forms of prior learning.’
- ‘We urge institutions to further develop partnerships and cooperation with employers in the ongoing process of curriculum innovation based on **learning outcomes**.’
- ‘With a view to the development of more student-centred, outcome-based learning, the next [Stocktaking] exercise should also address in an integrated way national qualifications frameworks, **learning outcomes** and credits, lifelong learning, and the recognition of prior learning.’

London Communiqué 2007

"The Bologna reforms have changed the face of higher education across Europe, thanks to the involvement and dedication of higher education institutions, staff and students. Higher education structures in Europe are now more compatible and comparable. Quality assurance systems contribute to building trust, higher education qualifications are more recognisable across borders and participation in higher education has widened. Students today benefit from a wider variety of educational opportunities and are increasingly mobile. The vision of an integrated EHEA is within reach".

Bucharest Communique
(2012)


ASSESSMENT OF HIGHER EDUCATION
LEARNING OUTCOMES
AHELO
FEASIBILITY STUDY REPORT
VOLUME 1
DESIGN AND IMPLEMENTATION
Karine Tremblay
Diane Lalancette
Deborah Roseveare
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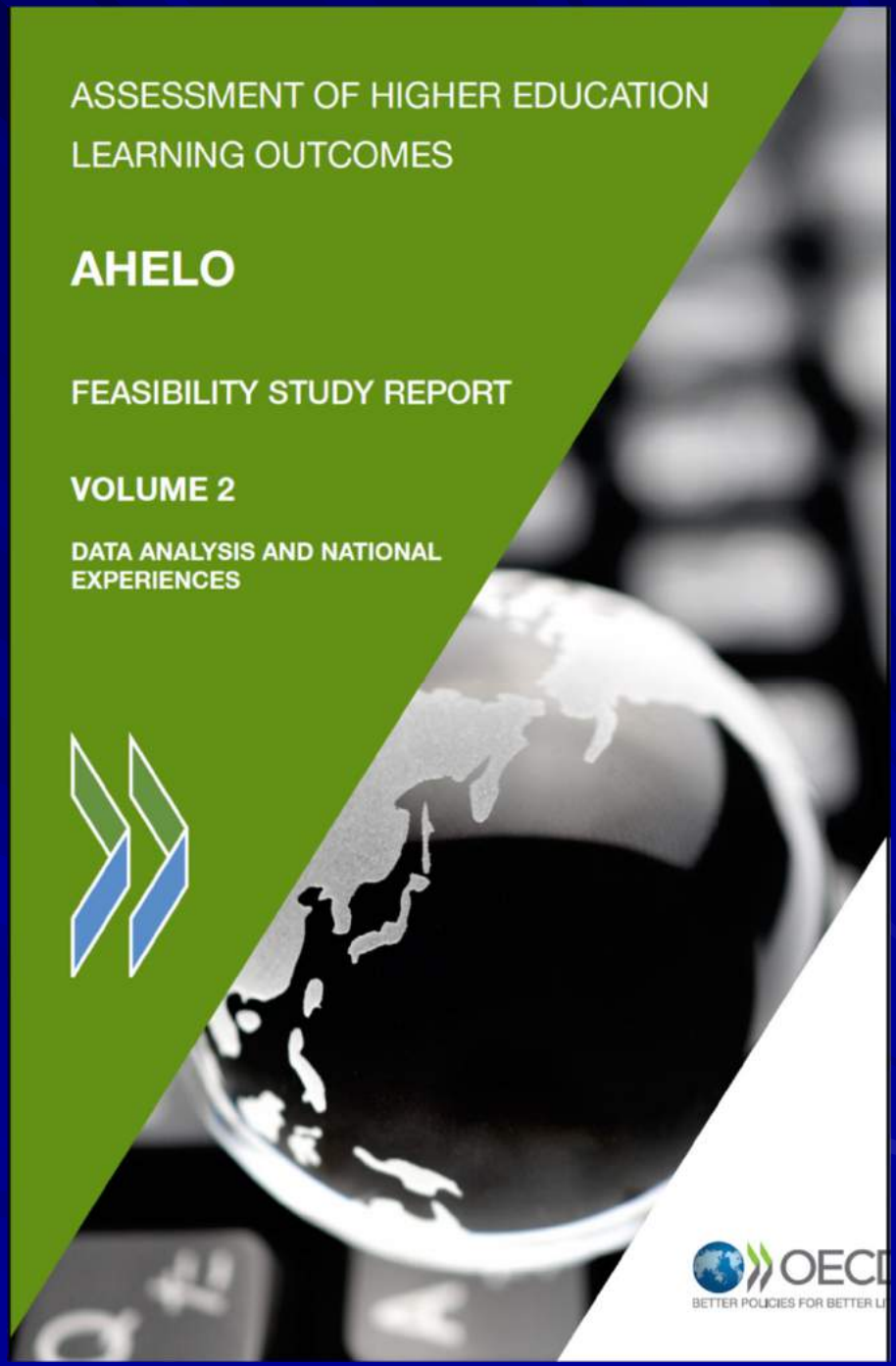
BETTER POLICIES FOR BETTER LIVES


ASSESSMENT OF HIGHER EDUCATION
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(2012)

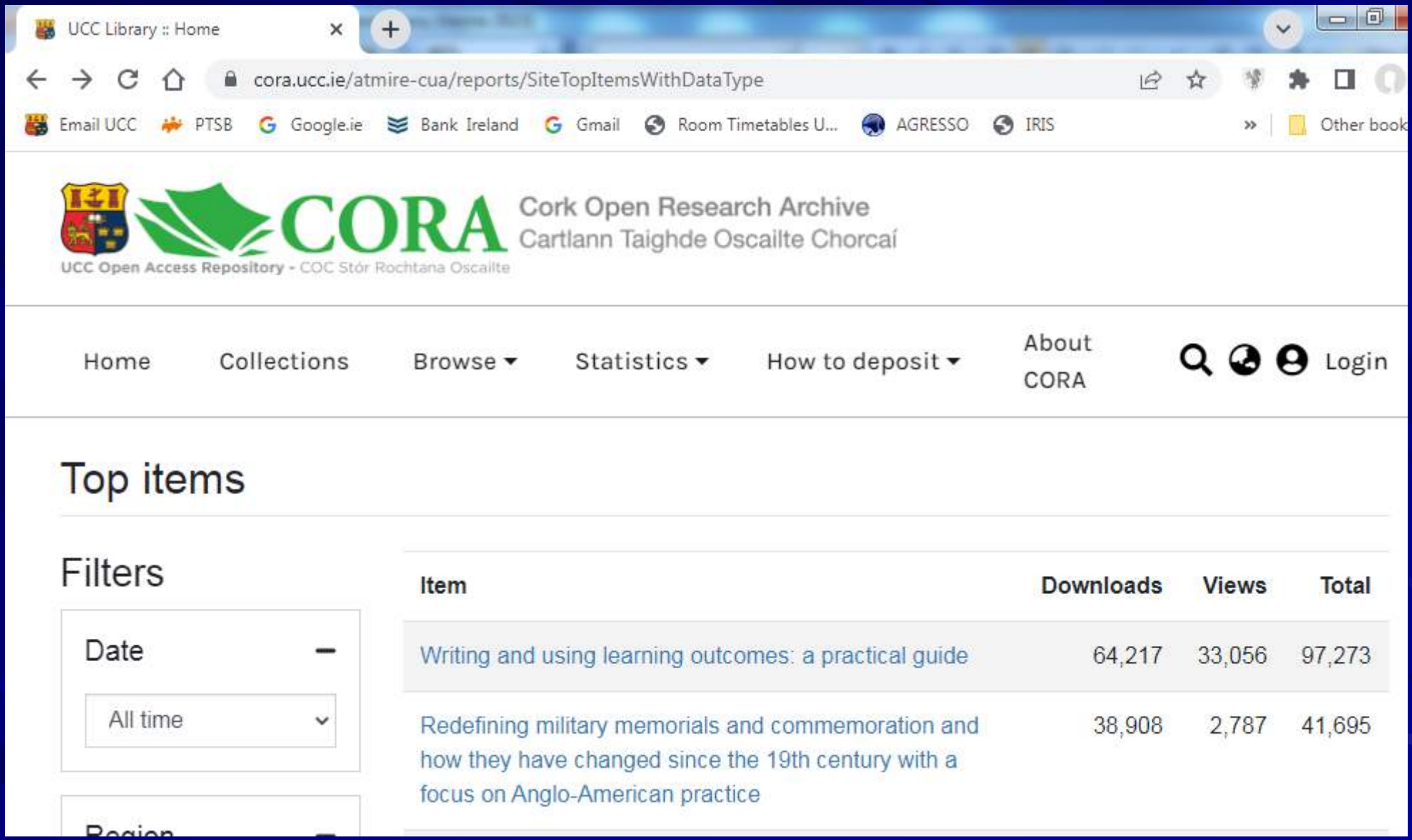
Growing focus on student learning outcomes - Another trend sees a shift away from inputs towards outcome-based notions of higher education throughput. This shift has been most evident with the Bologna Declaration which aimed at establishing a European Higher Education Area and to write all higher education programmes in terms of learning outcomes by 2010. This trend is becoming global with many countries aligning their systems to be Bologna-compatible.

Note global trend.

Emphasis on student centred learning and research on teaching-learning processes - The turn of the Century has also seen a shift in undergraduate education, from an "instruction paradigm" towards a "learning paradigm" in which the emphasis is no longer on the means but on the end. A corollary of this emphasis is to better understand the teaching-learning interplay. In this context, outcomes' assessments are important for the evaluation of instructional effectiveness.

Note emphasis on Teaching, Learning and Assessment.

What are learning outcomes helping us to do?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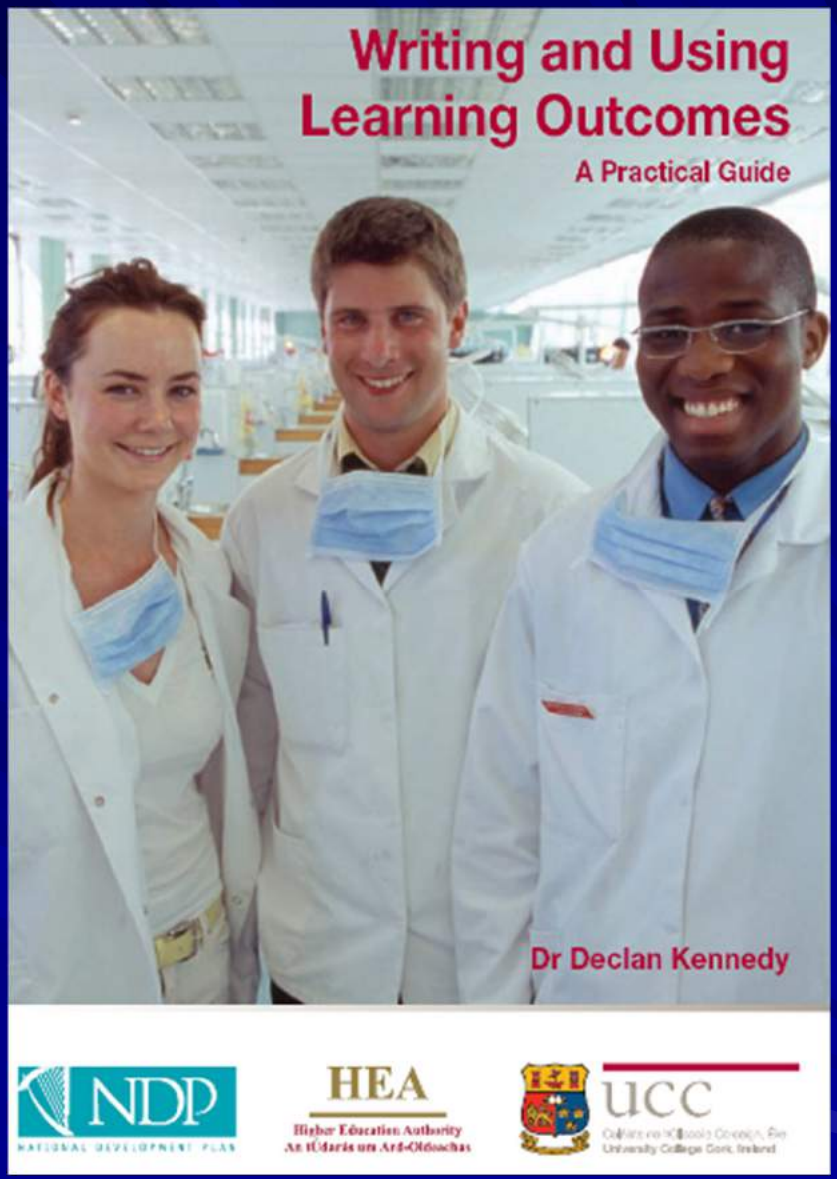
Writing and using learning outcomes: a practical guide
64,217
33,056
97,273
Redefining military memorials and commemoration and how they have changed since the 19th century with a focus on Anglo-American practice
38,908
2,787
41,695

Bologna Process:

- As a step towards achieving greater clarity in the description of qualifications, by 2010 all modules and programmes in third level institutions throughout the European Union had to be written in terms of learning outcomes.
- “Learning outcomes represent one of the essential building blocks for transparency within higher education systems and qualifications”

  - Bologna Working Group, p.18 (December 2004)
- Major contribution of exemplar material from staff taking “Postgraduate Certificate / Diploma in Teaching and Learning at Higher Education”.
- Staff training in UCC – lunchtime session and setting up of “Postgraduate Certificate / Diploma in Teaching and Learning at Higher Education”.
- To date, translated into 13 languages.



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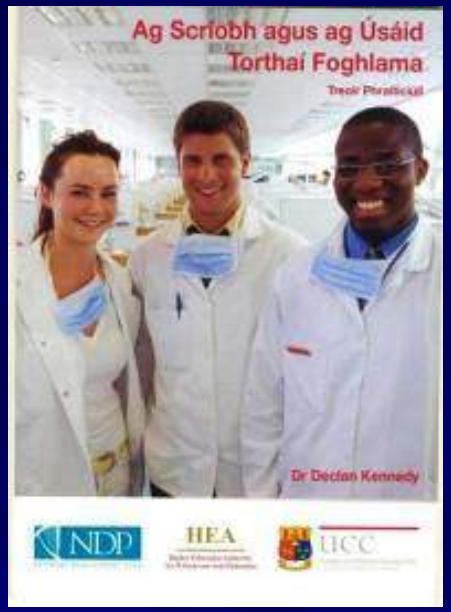
Ag Scríobh agus ag Úsáid Torthaí Foghlama
Treoir Phraiticiúil
Dr Declan Kennedy
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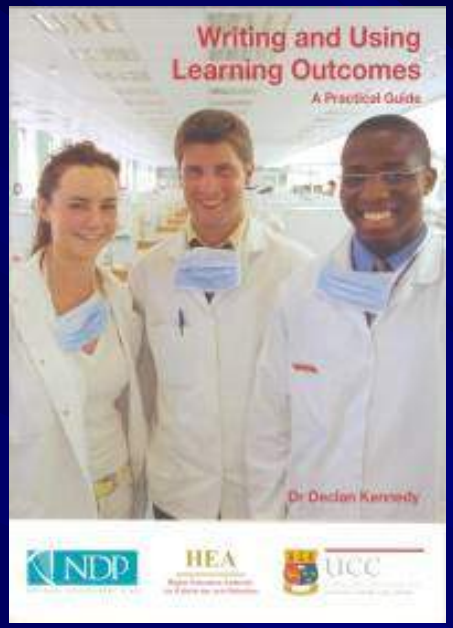
Writing and Using Learning Outcomes
A Practical Guide
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תהליך בולוניה ותפוקות הלמידה
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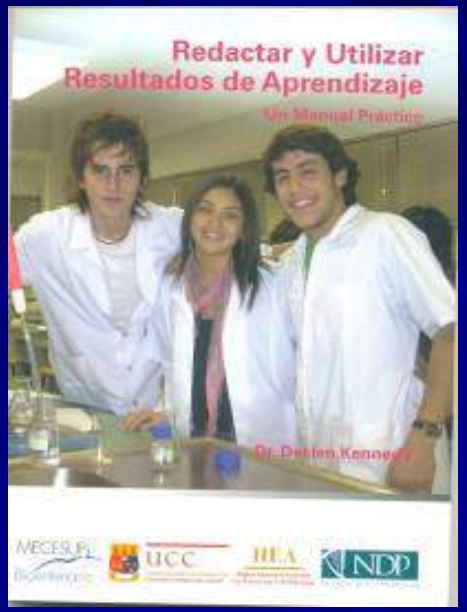
Redactar y Utilizar Resultados de Aprendizaje
Un Manual Práctico
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Pisanje i upotreba ishoda učenja
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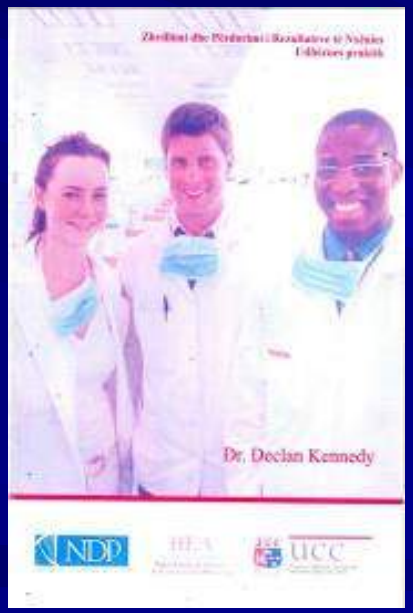
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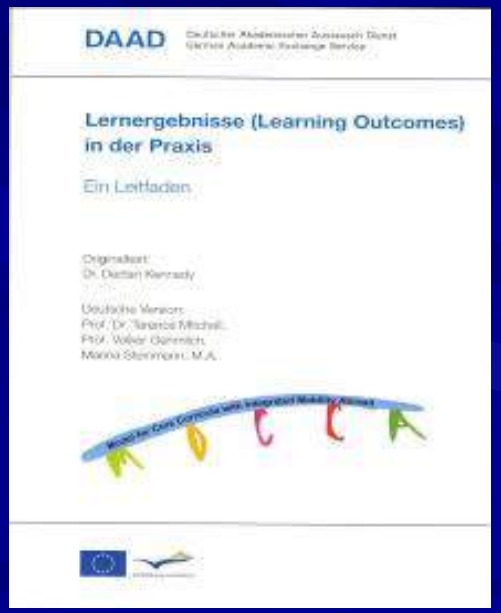
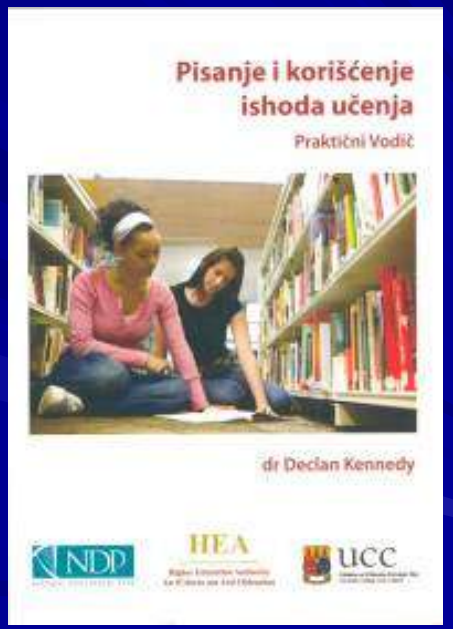

DAAD
Lernergebnisse (Learning Outcomes) in der Praxis
Ein Leitfaden


Pisanje i korišćenje ishoda učenja
Praktični Vodič
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Learning Outcomes, ECTS and Modularisation

- "ECTS is a tool that helps to design, describe, and deliver programmes and award higher education qualifications. The use of ECTS, in conjunction with outcomes-based qualifications frameworks, makes programmes and qualifications more transparent and facilitates the recognition of qualifications. ….ECTS is one of the cornerstones of the Bologna Process."

ECTS Users' Guide p.7 (2009)

The Bologna Process

"The Bologna Process has brought about a quiet and irreversible revolution in the higher educational systems of Europe. To date 46 countries have chosen formally to be associated with it and it implement its protocols which are at one radical and innovative as well as spacious and enabling"

FIN Report (University Sector Framework Implementation Network, 2009)

"The aspirations and ideals of the Bologna Process are, of necessity, stated in general and high level terms but it is recognised that their achievement demands a grounding in practical reality and in enabling organisational and administrative structures and practices. The original protocols of the Bologna Process recognised the need for strong administrative instruments to give tangible meaning and shape to the ideals – the Diploma Supplement and ECTS were mentioned – and as the process developed the need for firm Qualification Frameworks, explicit Learning Outcomes and transparent Assessment procedures became apparent"

(FIN Framework Implementation Report, 2009)

Framework of Qualifications for European Higher Education Area (EHEA) – "Bologna Framework"

- Conference of European Ministers Responsible for Higher Education in Bergen, Norway (2005) adopted the overarching framework for qualifications in EHEA.
- This framework shows
  - Three cycles (including within national contexts, the possibility of intermediate qualifications)
  - Generic descriptors for each cycle based on learning outcomes and competences.
  - ECTS credit ranges in the first and second cycles (i.e. Bachelors and Masters levels).
- Ministers committed themselves to drawing up National Frameworks for Qualifications compatible with Framework of Qualifications for European Higher Education area by 2010.

Bergen, Norway (2005)

Dublin Descriptors

- The Bologna Framework is a European higher education overarching framework with three cycles (Bachelor, Masters and Doctoral) and associated generic descriptors that help us to write learning outcomes.
- The Descriptors for each cycle were drawn up at meeting of Education Ministers in Dublin
- These generic cycle descriptors are used in The Framework of Qualifications for EHEA (Bologna Framework) and are commonly called the “Dublin Descriptors” adopted in 2005.
- Each country developS its own National Framework of Qualifications which map on to the Bologna Framework, i.e. the Bologna framework is a type of translation or benchmark device.

First Cycle : Bachelor's Cycle

Note use of Generic Descriptors – not the same as Learning Outcomes.

Generic Descriptors

	Outcomes	ECTS Credits
First cycle qualification	Qualifications that signify completion of **the first cycle** are awarded to students who: • have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study; • can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study; • have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues; • can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences; • have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.	Typically include 180-240 ECTS credits

Minimum of 3 years = 180 credits

4 years = 240 credits.

Second Cycle: Master's cycle
[60 – 120 ECTS credits]

Second cycle qualification	Qualifications that signify completion of **the second cycle** are awarded to students who: • have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context; • can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study; • have the ability to integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments; • can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously; • have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.	Typically include 90-120 ECTS credits, with a minimum of 60 credits at the level of the 2nd cycle

1 year
or
2 years

Third Cycle: Doctoral cycle

[Number of ECTS credits not specified]

Third cycle qualification	Qualifications that signify completion of **the third cycle** are awarded to students who: • have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field; • have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity; • have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication; • are capable of critical analysis, evaluation and synthesis of new and complex ideas; • can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise; • can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society.	Not specified

See two page summary of framework of qualifications on:
www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/Framework_qualificationsforEHEA-May2005.pdf

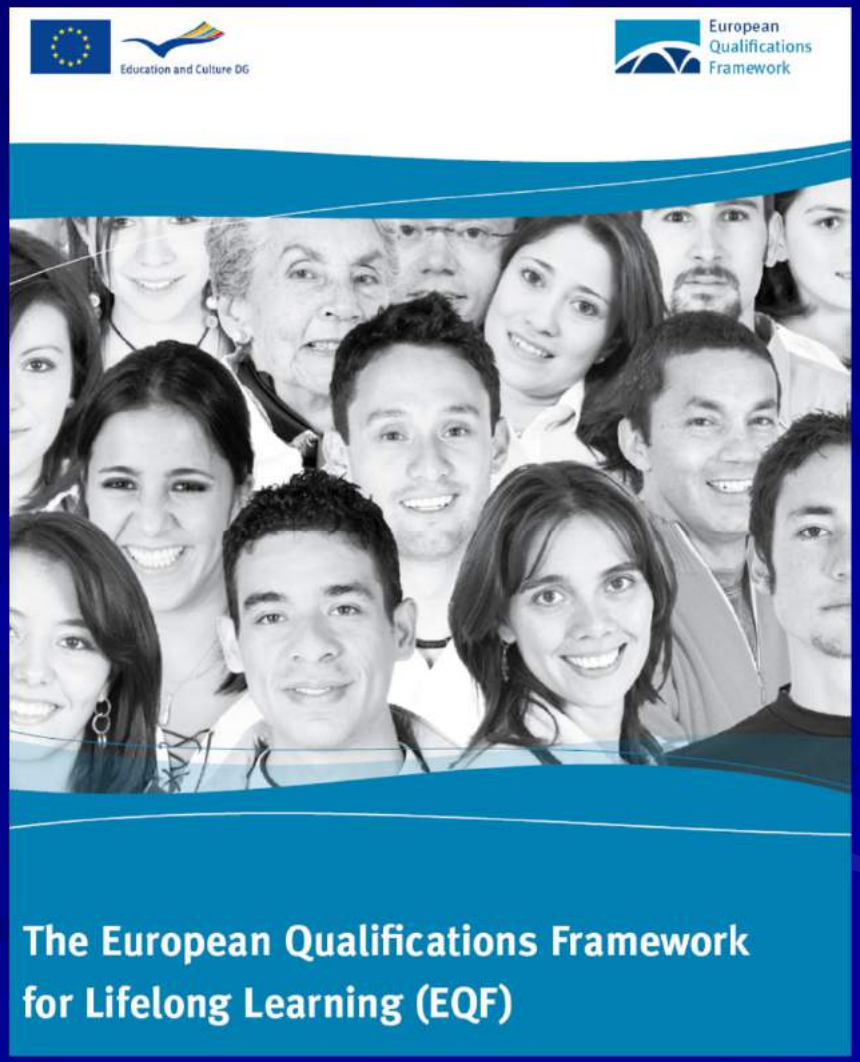
From Generic Desciptors to Programme Learning Outcomes and Module Learning Outcomes

- Each of the three Bologna cycles is described in terms of generic descriptors as outlined in the “Dublin descriptors” (2005).
- We use the generic descriptors as the starting point for developing learning outcomes brings them to life!

Moving from the Bologna Process (third level) to the European Qualifications Framework for Lifelong Learning (Primary, Secondary and Third Level)

European Qualifications Framework for Lifelong Learning (EQF)

- Adopted by EU in 2008.
- A common European reference framework that links together the qualification systems of EU countries.
- A “Translation Device” to make qualifications easier to understand.
- Has 8 levels with a set of descriptors for each level. These descriptors describe the learning corresponding to each level under the heading of knowledge, skills and competence.

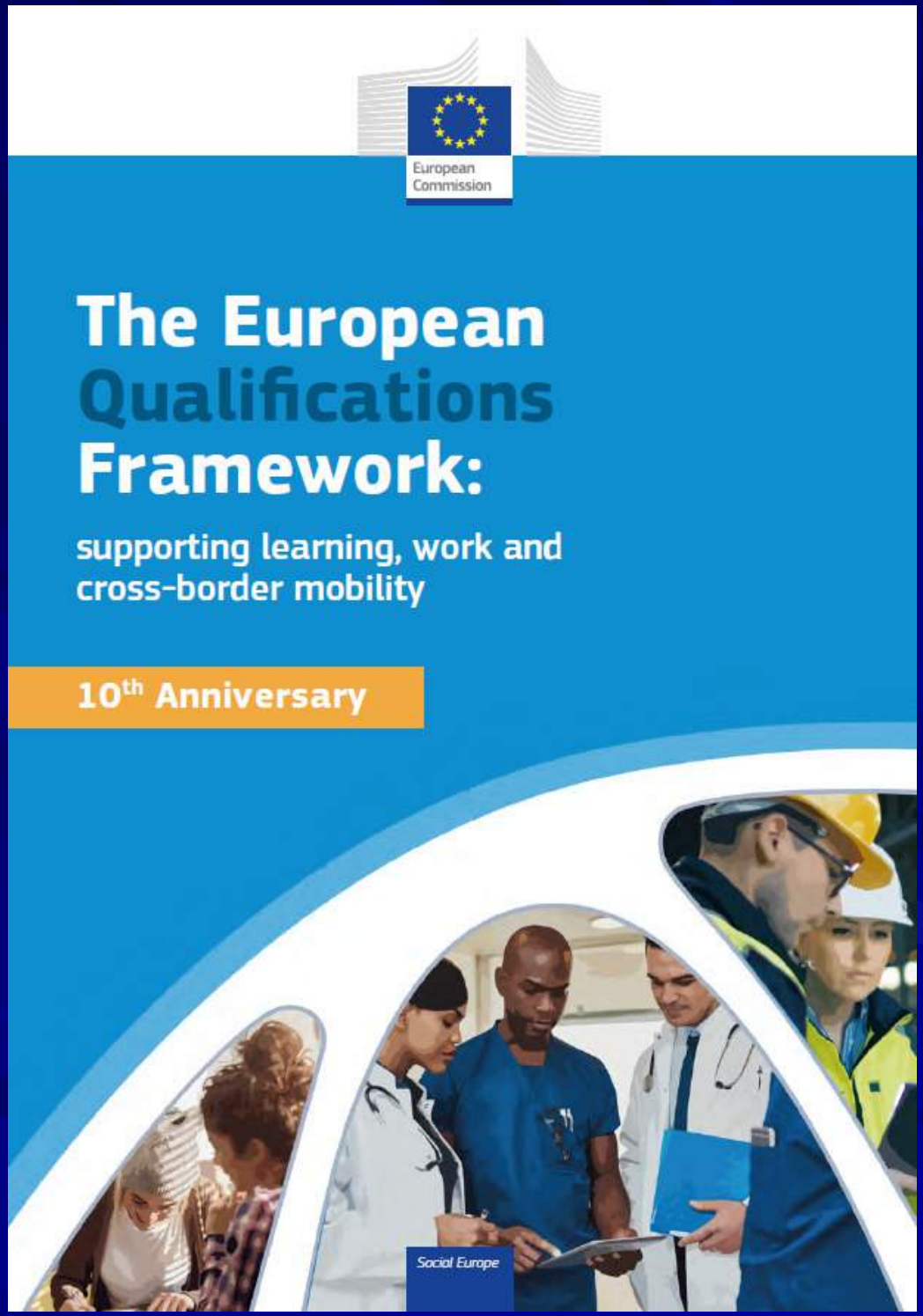


THE EUROPEAN QUALIFICATIONS FRAMEWORK FOR LIFELONG LEARNING

DESCRIPTORS DEFINING LEVELS IN THE EUROPEAN QUALIFICATIONS FRAMEWORK (EQF)

		KNOWLEDGE	SKILLS	COMPETENCE
Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications.		In the context of EQF, knowledge is described as theoretical and/or factual.	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of EQF, competence is described in terms of responsibility and autonomy.
LEVEL 6**	The learning outcomes relevant to Level 6 are	→ advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	→ advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	→ manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts → take responsibility for managing professional development of individuals and groups
LEVEL 7***	The learning outcomes relevant to Level 7 are	→ highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research → critical awareness of knowledge issues in a field and at the interface between different fields	→ specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	→ manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches → take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
LEVEL 8****	The learning outcomes relevant to Level 8 are	→ knowledge at the most advanced frontier of a field of work or study and at the interface between fields	→ the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	→ demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

(2008)



Revised 2018

	Knowledge	Skills	Responsibility and autonomy	
	In the context of the EQF, knowledge is described as theoretical and/or factual.	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of the EQF, responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility.	
Level 1	Basic general knowledge.	Basic skills required to carry out simple tasks.	Work or study under direct supervision in a structured context.	Level 1
Level 2	Basic factual knowledge of a field of work or study.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and solve routine problems using simple rules and tools.	Work or study under supervision with some autonomy.	Level 2
Level 3	Knowledge of facts, principles, processes and general concepts in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.	Take responsibility for completion of tasks in work or study. Adapt own behaviour to circumstances in solving problems.	Level 3
Level 4	Factual and theoretical knowledge in broad contexts within a field of work or study.	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change. Supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.	Level 4
Level 5	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study, and an awareness of the boundaries of that knowledge.	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems.	Exercise management and supervision in contexts of work or study activities where there is unpredictable change. Review and develop performance of self and others.	Level 5
Level 6	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles.	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study.	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts. Take responsibility for managing professional development of individuals and groups.	Level 6
Level 7	Highly specialised knowledge, some of which is at the forefront of knowledge, in a field of work or study, as the basis for original thinking and/or research. Critical awareness of knowledge issues in a field and at the interface between different fields.	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures, and to integrate knowledge from different fields.	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches. Take responsibility for contributing to professional knowledge and practice, and/or for reviewing the strategic performance of teams.	Level 7
Level 8	Knowledge at the most advanced frontier of a field of work or study, and at the interface between fields.	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation, and to extend and redefine existing knowledge or professional practice.	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts, including research.	Level 8

Recommendation that Member States:

"Use an approach based on learning outcomes when defining and describing qualifications, and promote the validation of non-formal and informal learning… paying particular attention to those citizens most likely to be subject to unemployment or insecure forms of employment, for whom such an approach could help increase participation in lifelong learning and access to the labour market"

(EU Commission, 2008)

	EHEA Framework (Bologna)	European Qualifications Framework for Lifelong Learning (EQF) EU only
Honours Bachelor Degree	First cycle	Level 6
Masters Degree	Second cycle	Level 7
Doctorate	Third cycle	Level 8

Progress of Bologna Process

- Bologna 1999 – 29 Countries, 6 action lines
- Prague 2001 – 33 Countries, 9 action lines
- Berlin 2003 – 40 Countries, 10 action lines
- Bergen 2005 – 45 Countries
- London 2007 – 46 Countries

Now 48 countries (Kazakhstan and Belarus)

Influence of Bologna Process is now worldwide with other countries aligning their systems to Bologna.

Emphasis on implementing and making progress in the Bologna Process.

The Bologna Process 2020 -
The European Higher Education Area in the new decade

Communiqué of the Conference of European Ministers Responsible for Higher Education, Leuven and Louvain-la-Neuve, 28-29 April 2009

6. The Bologna Process is leading to greater compatibility and comparability of the systems of higher education and is making it easier for learners to be mobile and for institutions to attract students and scholars from other continents. Higher education is being modernized with the adoption of a three-cycle structure including, within national contexts, the possibility of intermediate qualifications linked to the first cycle and with the adoption of the European Standards and Guidelines for quality assurance. We have also seen the creation of a European register for quality assurance agencies and the establishment of national qualifications frameworks linked to the overarching European Higher Education Area framework, based on learning outcomes and workload. Moreover, the Bologna Process has promoted the Diploma Supplement and the European Credit Transfer and Accumulation System to further increase transparency and recognition.

For many countries, one of the most challenging parts of the Bologna reform process is to make their National Framework of Qualifications compatible with the Framework for Qualifications of the European Higher Education Area.

- Showing that National Qualifications Framework is compatible with Framework of Qualifications of EHEA and EQF
- Introducing Learning Outcomes and writing modules and programmes in terms of Learning Outcomes.
- Showing evidence that the Learning Outcomes have been achieved.
- Workload in terms of ECTS credits and credit accumulation rather than teaching time.
- Showing how the National Framework of Qualifications facilitates Lifelong Learning.

Implications of Bologna Process and European Qualifications Framework for Teaching and Learning

- Central role of Learning Outcomes in education at all levels of the educational system.
- Training of teachers and administrators about concept of Learning Outcomes and to teach within a Learning Outcomes Framework.
- Co-ordination of Teacher-Centred approach and Student - Centred approach to Teaching and Learning.
- Linking of Learning Outcomes to Teaching and Learning activities and to Assessment.

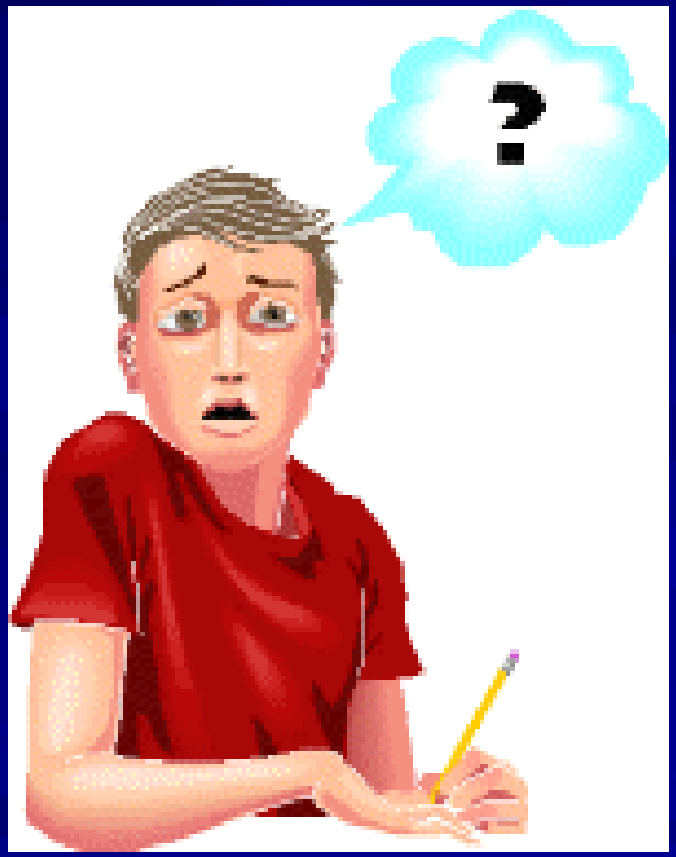
Providing Evidence of the Learning Outcomes Framework

For many countries, one of the most challenging parts of the Bologna reform process is to make their National Framework of Qualifications compatible with the Framework for Qualifications of the European Higher Education Area.

- Showing that National Qualifications Framework is compatible with Framework of Qualifications of EHEA and EQF
- Introducing Learning Outcomes and describing modules and programmes in terms of module Learning Outcomes and Programme Learning outcomes – getting the paperwork in order as evidence of this Learning Outcomes Framework.
- Expressing workload in terms of ECTS credits and credit accumulation
- Showing evidence that the Learning Outcomes have been achieved.

- Providing evidence that the Learning Outcomes, Teaching and Learning Activities and also Assessment are aligned.

What are the benefits and potential problems of Learning Outcomes?



"Learning Outcomes represent one of the essential building blocks for transparent higher education systems and qualifications… It is important that there should be no confusions about their role, nature and significance or the educational foundations of the Bologna process will be weakened"

(Adams S, 2004)

"Learning outcomes represent what is formally assessed and accredited to the student and they offer a starting point for a viable model for the design of curricula in higher education which shifts the emphasis form input and process to the celebration of student learning"

(Allan J, 1996)

The benefits of Learning Outcomes

- Help to explain more clearly to students what is expected of them and thus help to guide them in their studies – motivation and sense of purpose
- Help teachers to focus more clearly on what exactly they want students to achieve in terms of knowledge and skills.
- Help teachers to clarify their thinking about what they want to achieve and the common language of learning outcomes helps to facilitates discussion with colleagues.
- Helps to define the assessment criteria more effectively.
- Help to provide guidance to employers about the knowledge and understanding possessed by graduates of programmes, i.e. show the value of the programme in terms of programme learning outcomes and module learning outcomes.
- Help to start discussion on Teaching and Learning in third level institutions.

International Recognition and Mobility

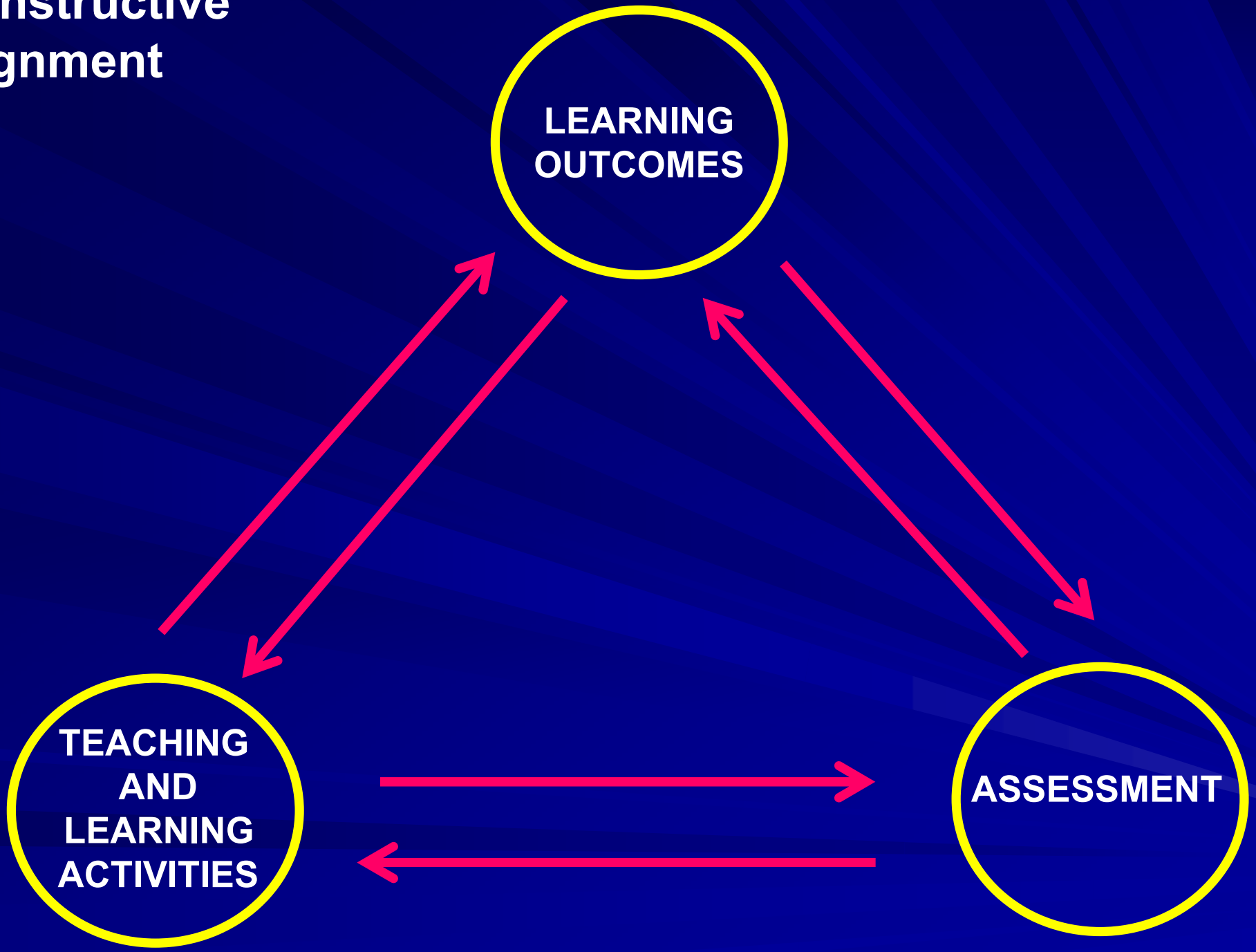
"Learning outcomes are important for recognition, since the basis for recognition procedures is in the process of shifting from quantitative criteria such as the length and type of courses studied, to the outcomes reached and competencies obtained during these studies. The principal question asked of the student or the graduate will therefore no longer be "What did you do to obtain your degree?" but rather "What can you do now you have obtained your degree?". This approach is of more relevance to the labour market and is certainly more flexible when taking into account issues of lifelong learning, non-traditional learning and other forms of non-formal educational experiences"

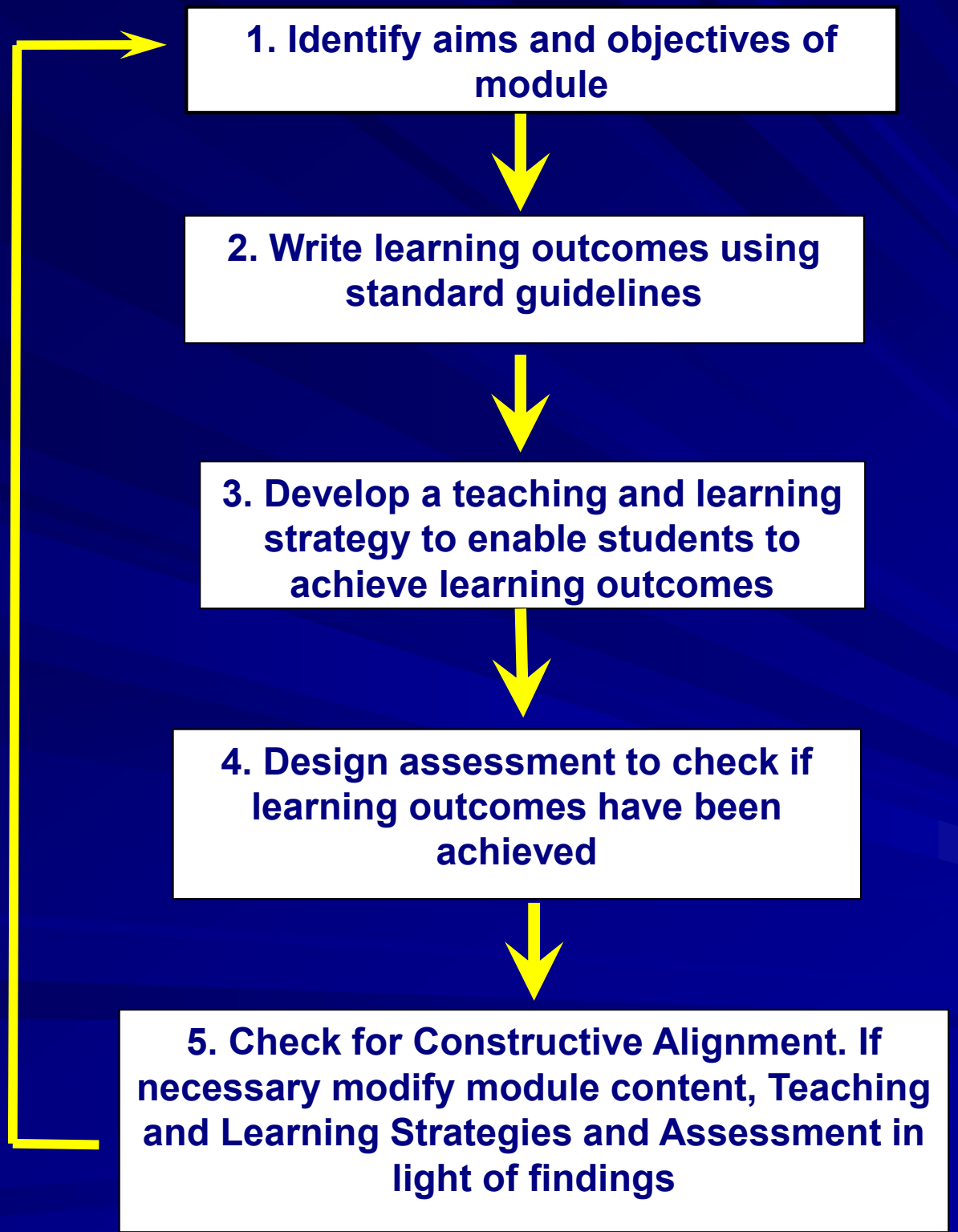
Council of Europe, 2002.

Potential problems with Learning Outcomes

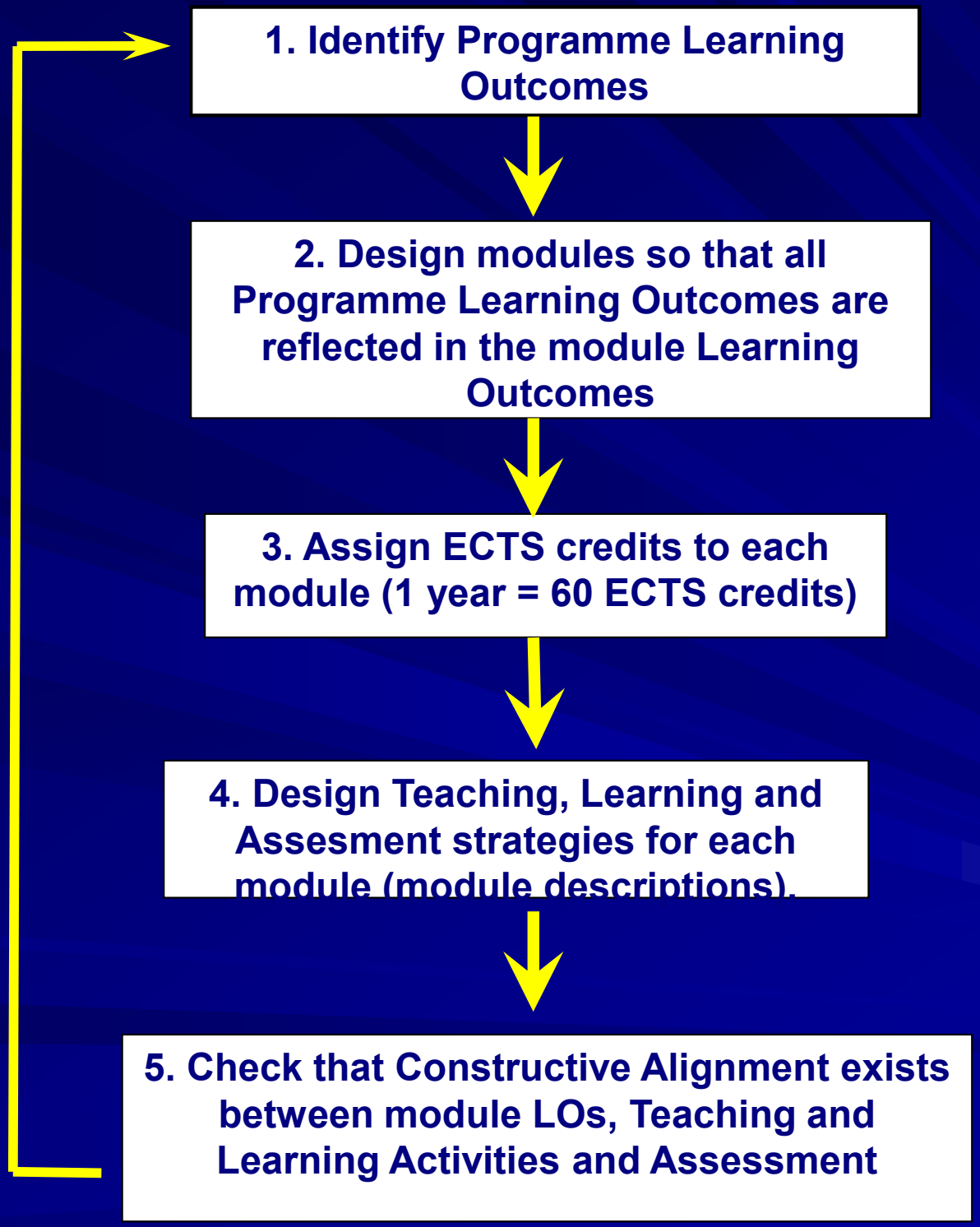
- Could limit learning if learning outcomes written within a very narrow framework – lack of intellectual challenge to learners.
- Learning outcomes should not be reductionist but rather expansive and intended to promote the higher order thinking skills.
- Danger of assessment-driven curriculum if learning outcomes too confined.
- Could give rise to confusion among students and staff if guidelines not adhered to when drawing up learning outcomes, etc.

Constructive alignment





"Bottom up" approach for existing modules



"Top Down" Approach for designing new programmes

Learning outcomes Module ED2100	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 at 2 hours per week. Laboratory work	Supervision of Teaching Practice Assessment of teaching skills **(50 marks)**

"The relationship between learning outcomes and competences is a complex area – the subject of some debate and no little confusion".

(Adam, 2004)

- There is considerable confusion in the literature with regard to the meaning of the term *competence* and the relationship between competences and learning outcomes.
- Competence is also written as competency (Plural: competences, competencies).

Competence - what does this term mean?

- It is difficult to find a precise definition for the term competence. The situation is summarised by Winterton et al (2005) as follows:

"There is such confusion and debate concerning the concept of 'competence' that it is impossible to identify or impute a coherent theory or to arrive at a definition capable of accommodating and reconciling all the different ways that the term is used.

(Winterton et al., 2005)

Competence – a broad definition

Competence is “a dynamic combination of attributes, abilities and attitudes. Fostering these competences is the object of educational programmes. Competences are formed in various course units and assessed at different stages. They may be divided into subject-area related competences (specific to a field of study) and generic competences (common to any degree course)”.

The ECTS Users’ Guide (2005)

Competence and Competency

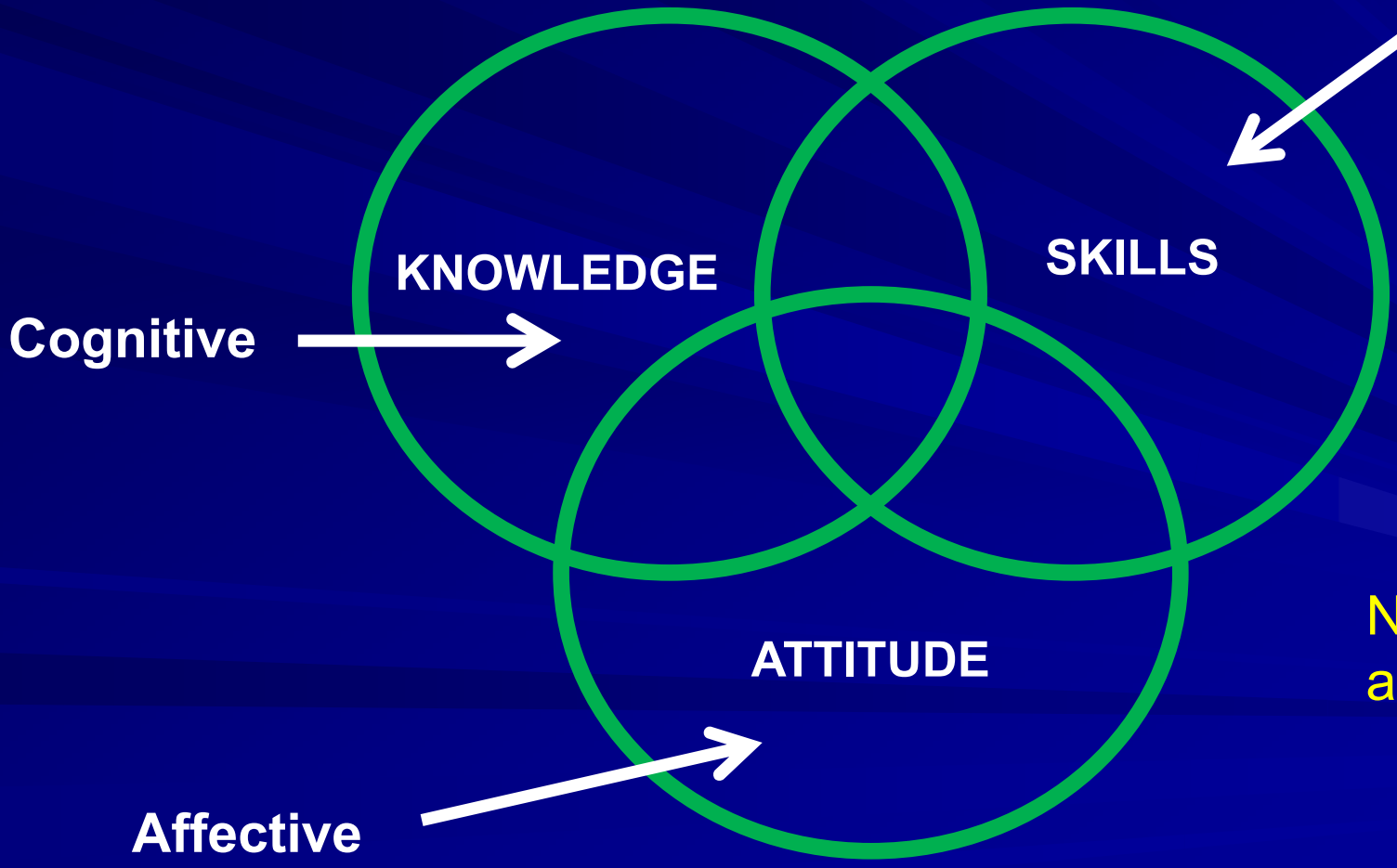
- Some authors (Boam and Sparrow, 1992; Hendry, Arthur and Jones 1995; Mitrani, Dalziel and Fitt, 1992; Smith, 1993) use the term competency (plural competencies) when referring to occupational competences.
- However, other authors treat the terms competence and competency as being synonymous (Brown, 1993, 1994; McBeath, 1990).
- Hartle (1995) describes competency as a characteristic of an individual that has been shown to drive superior job performance and refers to visible competencies of knowledge and skills as well as underlying elements of competencies such as characteristics and motives.
- Elkin (1990) associates competences with micro-level job performance and competencies with higher management attributes.

- Cockerill (1989) describes output competences such as effective presentation skills, with input competencies such as self-confidence (Winterton et al., 2005).
- Burgoyne (1988) distinguishes “being competent” (meeting the demands of the job) from “having competencies” (possessing the necessary attributes to perform competently).
- Woodruffe attempts to distinguish between competence and competency by describing competence as aspects of the job which an individual can perform with competency referring to a person’s behaviour that underpins competent performance.
- Tate (1995) agrees with Woodruffe’s definition and warns against confusing “input competencies with output competences”.

- Burgoyne (1988) distinguishes “being competent” (meeting the demands of the job) from “having competencies” (possessing the necessary attributes to perform competently).
- Woodruffe (1991) describes competency as “an umbrella term to cover almost anything that might directly or indirectly affect job performance”. He attempts to distinguish between competence and competency by describing competence as aspects of the job which an individual can perform with competency referring to a person’s behaviour that underpins competent performance

Bloom's Taxonomy – areas of overlap

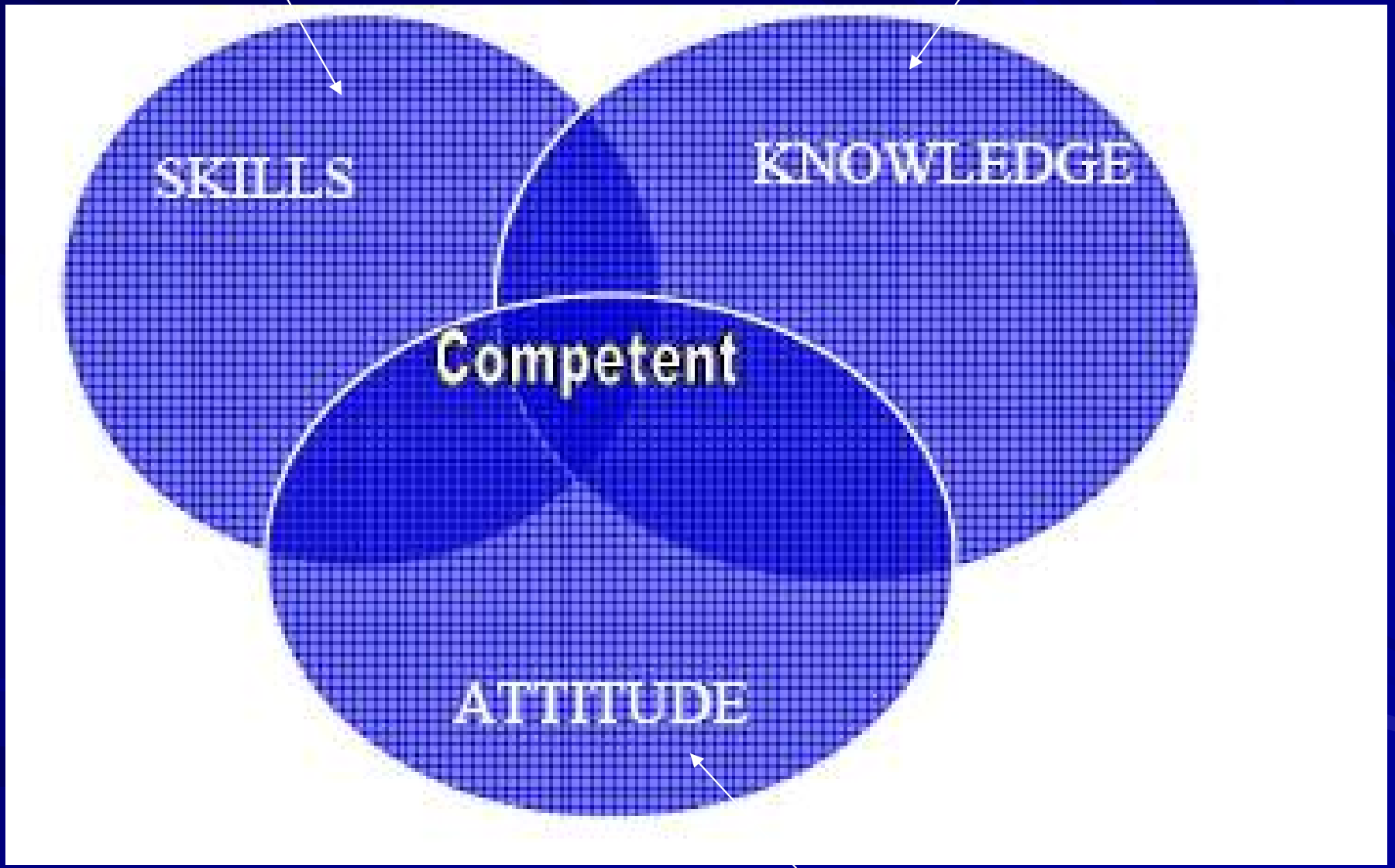
Skills in narrow sense of manual dexterity or in broader sense.



Note the overlapping areas!

Psychomotor

Cognitive



Affective

Competence:

- The student should be able to use the mass and energy balances for a given food process.

Objectives:

- Understand scope of mass balances in food processing systems.
- Understand appropriate use of mole fractions and mass fractions in mass balances

Learning outcomes:

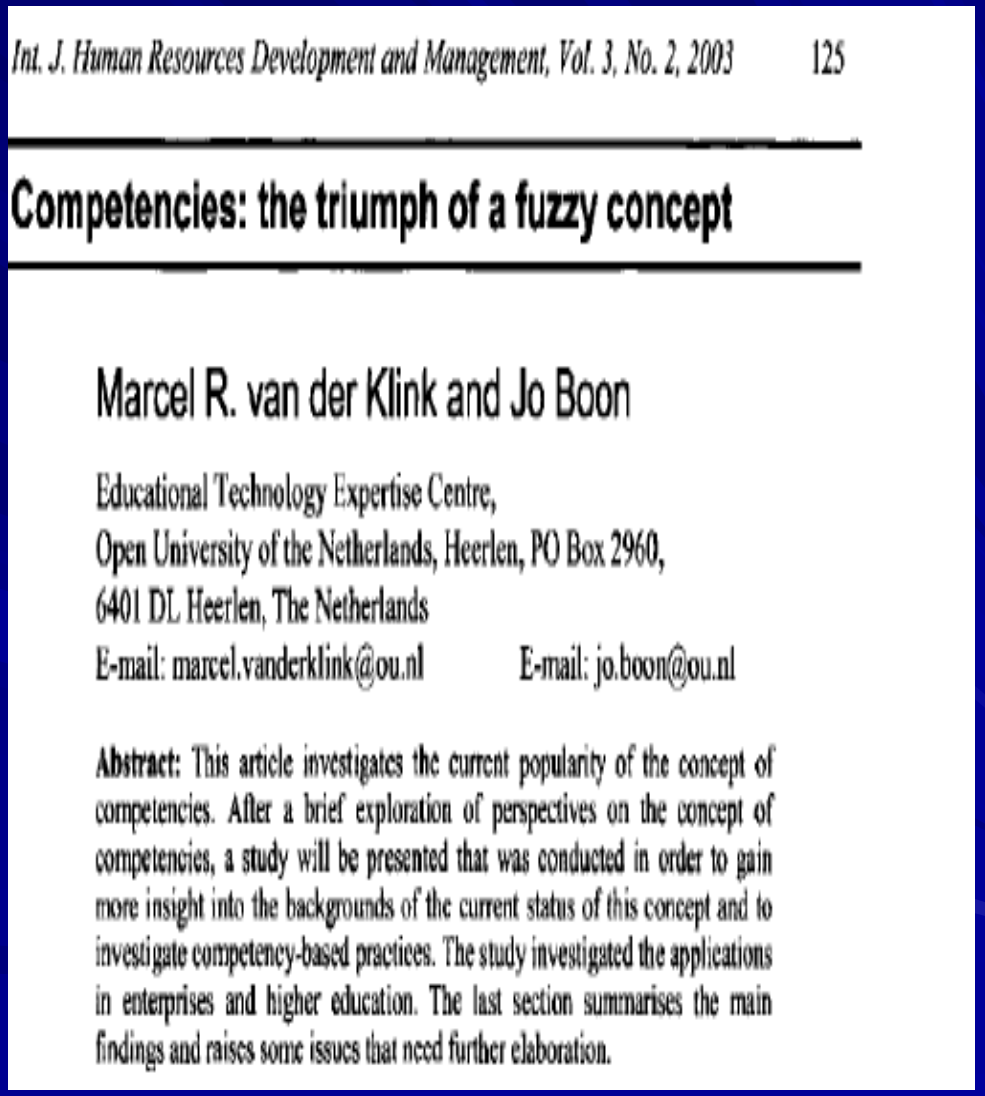
- Describe the general principles of mass balances in steady state systems.
- Draw and use process flow diagrams with labels on flow streams for mass balance problems.
- Solve mass balance problems associated with food processing operations.
- Design and solve mass balances for complex process flow systems, including batch mixing problems, multiple stage flow problems, problems with multiple inflows and outflows, recycle streams and multiple components, and processes where chemical reactions take place.

Hartel and Foegeding (2004)

- The learning outcomes written by Hartel and Foegeding specify precisely what it is expected that the students will be able to do in order to demonstrate that they have acquired this particular competence.

Competence – a “fuzzy” concept (Van der Klink and Boon)

- Van der Klink and Boon (2002) describe competence as a “fuzzy concept”
- On the positive side they state it is a “useful term, bridging the gap between education and job requirements”.



Int. J. Human Resources Development and Management, Vol. 3, No. 2, 2003 125

Competencies: the triumph of a fuzzy concept

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Abstract: This article investigates the current popularity of the concept of competencies. After a brief exploration of perspectives on the concept of competencies, a study will be presented that was conducted in order to gain more insight into the backgrounds of the current status of this concept and to investigate competency-based practices. The study investigated the applications in enterprises and higher education. The last section summarises the main findings and raises some issues that need further elaboration.

Van der Klink and Boon (2002) attempt to trace the different interpretations of the concept of competence within the educational systems of various countries:

There is considerable confusion about what competency actually means… First, differences can be observed between nations along the lines of different national educational policies and different types of relations between education and the labour market, many of which have an historic origin. In the British approach it refers to the ability to meet the performance standards for functions and professions such as those developed for National Vocational Qualifications (NVQs) in the UK. In the USA, competencies refer to the skills, knowledge and characteristics of persons, that is traits, motives and self-concept, which contribute to performance excellence. ….. More than in the UK or the USA, the German perspective stresses a holistic view of competency. It is not just a random collection of skills and knowledge. Competencies are defined as integrated action programmes that enable individuals to perform adequately in various job contexts within a specific profession

(Van der Klink and Boon, 2002)

Learning Outcomes and Competences



Declan Kennedy / Áine Hyland / Norma Ryan

Abstract

There is wide variation in the literature regarding the interpretation of the meaning of the term competence. This interpretation ranges from a description of competence in terms of performance and skills acquired by training to a broad overarching view that encompasses knowledge, understanding, skills, abilities and attitudes. Due to the lack of clarity of the concept of competence, assessment of competences can be very difficult. Some authors warn against associating competence exclusively with skills, others distinguish between the terms competence and competency whilst others treat these terms as being synonymous. The essential problem appears to be that these terms are liberally used as general terms to refer to various aspects of job performance without any attempt being made to give precise definitions of the terms. While various efforts have been made to arrive at a single definition of the term competence, no agreement has been reached and there is still wide variation of meaning between various cultures and between different professions. This is in contrast to the clear definition of the concept of learning outcomes found in the literature. It is recommended that if the term competence is being used, the definition of competence being used in the particular context should be stated and also that competences should be written using the vocabulary of learning outcomes.

Recommendations

- It is obvious from the literature that within certain professions, the term competence has a shared meaning. Hence, there is no problem with using the concept of competence since there is a common understanding of its meaning among the members of that profession.
- The problem arises when the term competence is used in a general context without defining what is meant by the term.
- Given the considerable confusion in the literature, if the term competence must be used, then its meaning needs to be clearly defined for the context in which it is being used.

- Therefore, in order to avoid confusion it is recommended that when using the term competence, the following guidelines should be followed:

1. State the definition of competence that is being used in the particular context.
2. To ensure clarity of meaning, write competences using the vocabulary of learning outcomes, i.e. express the required competence in terms of the students achieving specific programme learning outcomes or module learning outcomes.

- Since there is not a common understanding of the term competence, learning outcomes have become more commonly used than competences when describing what students are expected to know, understand and/or be able to demonstrate at the end of a module or programme.
- The “fuzziness” of competences disappears in the clarity of learning outcomes!

Learning Outcomes in the ECTS Users' Guide 2015

Some Areas of Concern

Declan Kennedy
Marian McCarthy

This paper discusses the topic of learning outcomes and competences within the overall context of the EHEA, and expresses serious concern regarding the numerous errors and inaccuracies found in the *ECTS Users' Guide 2015*. Whilst this Guide deals very comprehensively and clearly with the ECTS system, it displays serious deficiencies when discussing the concept of learning outcomes, the interpretation of the term 'competence', the relationship between learning outcomes and competences and also the relationship between learning outcomes and generic descriptors. The advice given on the writing of programme learning outcomes is seriously flawed and is not based on any sound educational principles. In addition, many of the exemplars of learning outcomes given are incorrectly written and do not satisfy the basic guidelines for writing learning outcomes in that items that are presented as programme learning outcomes are in fact programme aims. Many of the fundamental educational errors that appeared in a recent publication of the Tuning project also appear in the Guide. Some recommendations are made to correct the various deficiencies in the Guide and to bring it to an acceptable educational standard.

(2016)

Contents

Available for download:
https://www.researchgate.net/publication/312052816_Learning_Outcomes_in_the_ECTS_Users'_Guide_2015_-_Some_Areas_of_Concern

Learning Outcomes

At the end of this presentation you should be able to:

- Distinguish between Aims, Objectives and Learning Outcomes.
- Differentiate between student-centred learning and teacher-centred learning.
- Discuss the role of Learning Outcomes in the Bologna Process and in the European Qualifications Framework
- Evaluate the connections between learning outcomes, generic descripors, qualification frameworks and competences in the context of teaching and learning within a Learning Outcomes framework.

The End!

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