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Developing a New Template for Designing Syllabi for Irish Secondary School Subjects.



Professor Áine Hyland & Dr Declan Kennedy

Abstract

This paper "Developing a new template for designing syllabi ("curriculum specifications") for secondary school subjects in Ireland" addresses curriculum and syllabus design in Ireland in the past decade. The issue has been a contentious one in recent years since a new approach for designing curriculum was introduced by the National Council for Curriculum and Assessment (NCCA) at the beginning of the millenium. Taking account of concerns expressed by teachers and academics about the current design template being used by the NCCA, this paper proposes a new template for the design of Leaving Certificate syllabi, based on examples of good practice internationally.

Introduction

In recent years, concerns have been expressed by practising teachers, university academics, professional bodies, Oireachtas committees, and experts in curriculum design about the quality of Junior Cycle and Leaving Certificate syllabi[1] ("curriculum specifications") published by the National Council for Curriculum and Assessment (NCCA). These concerns may be summarised as follows:

- **The Design of Leaving Certificate science syllabi in Ireland: an International Comparison (Hyland, 2014).** This report, by one of the authors of this paper, pointed out that the practice of the NCCA in designing syllabi that consist solely of a list of topics and learning outcomes is not good international practice in syllabus design. The report stated that the author had not come across any centralised or public examination syllabus at the end of senior cycle second level education which provides only a list of topics and learning outcomes. It concluded that "while learning outcomes are a very valuable tool for identifying what learners should know and be able to do at the end of a course or programme, it is not appropriate to use learning outcomes alone to define a syllabus and its assessment." (p. 5). This report was ignored by the NCAA which continued to use the same design for the new Leaving Cert syllabi, in spite of the reservations highlighted in the report.

1 * In this paper the term "syllabus" will be used instead of "specification" as the term "syllabus" has greater clarity and is the more commonly used term at international level.

- **The Irish Science Teachers' Association (2019).** In 2019 the ISTA published a report *Listening to the Voice of Science Teachers*. This report summarised the findings of a survey completed by its members (ISTA 2019). A total of 762 science teachers completed the survey. Among its findings were the following:
  - Lack of depth of treatment in the Junior Cycle science syllabus was a major problem for teachers in identifying what topics they should be teaching in the classroom.
  - 85% of teachers believed that the template of syllabus design used at Junior Cycle was unsuitable for use at Senior Cycle level.
  - There was concern for student and teacher well-being due to the stress caused by trying to successfully implement a vague syllabus in the classroom.
- **The Irish Agricultural Science Teachers' Association (2019, 2021)** made several submissions to the NCCA, to the Minister and to the Oireachtas Committee on Education about the problems encountered with the new Leaving Certificate Agricultural Science syllabus which was introduced into schools in 2019. Some of these documents are as follows:
  - **IASTA (2019)** ***IASTA Members' Survey Reveals Significant Issues with New Specification & the Individual Investigative Study.***
  - ***Flawed Leaving Certificate Agricultural Science syllabus examined for the first time*** (IASTA 2021). In this document the IASTA stated that "It is time to call a halt to the practice of the Department of Education publishing these vague and dumbed down syllabi. Teachers of Agricultural Science are the key to excellence in curriculum implementation in the classroom and deserve better than being provided with a sub-standard syllabus that does not measure up to international best practice". This document also quoted a teacher who stated at their annual conference: "I am teaching a topic on the Ag. Science specification at the moment and I don't know if I should be spending two months on the topic, two weeks, two days or two hours on it."
  - In the ***IASTA submission to the Oireachtas Committee on Education*** (IASTA 2021) it pointed out that "of 278 teachers that completed a survey circulated by the IASTA in January 2021, only one of the 278 teachers rated their level of confidence in delivering the new specification as 'very confident'".
- **Third level academics (2020)**. In a letter to the Irish Times (Childs 2020) Dr. Peter Childs, Emeritus Senior Lecturer in Science Education, University of Limerick, described the situation regarding the use of template of syllabus design based only on learning outcomes as follows:

  > *It is like trying to build a house based only on its desired features, but without an architectural drawing and detailed plans. Teachers need a detailed syllabus, like the ones currently used, in order to teach effectively.* He went on to say *It is a recipe for disaster when teachers do not know what they are supposed to teach and to what depth, where each teacher becomes the arbiter of the curriculum.*

The full text of the letter may be viewed at the URL in the list of references.

- **An Gréasán – the Association of Teachers of Irish (2021).** In April 2021 An Gréasán carried out a survey of their members on the draft specifications for Leaving Certificate Irish (Association of Teachers of Irish 2021). The survey was completed by 420 teachers. The report stated that "teachers have expressed great dissatisfaction regarding the Junior Cycle Gaeilge course".

  The following recommendation was made in the report: "It is essential that the implementation of the Junior Cycle Gaeilge course is fully analysed, that the problems with this course are resolved, and that it is examined how the results of this review may affect the proposed Leaving Certificate specifications".

  The report also stated that "97% of teachers believe that more details should be provided in the draft specifications on the potential themes and topics that would evolve from the learning outcomes to give clear direction to teachers and students." (p. 6)

  It also stated "Only very basic detail is given, and there is a danger therefore that different interpretations of the learning outcomes may be taken and developed by different groups (e.g. the SEC, the textbook publishers etc.) and that these may not be aligned with each other. This approach is not satisfactory for an exam as important as the Leaving Certificate." (p. 6).

  Details of the survey may be found at the URL in the list of references.

- **Irish language organisations (2021).** Under the auspices of Conradh na Gaeilge, fourteen organisations interested in the promotion of Irish in the education system commissioned a report *Discussion Document responding to the Senior Cycle Draft Irish Specifications L1 an L2 published for consultation by the NCCA on 23 February 2021* (Hyland and Uí Uiginn 2021). This report provides a detailed analysis of international good practices in syllabus reform and highlighted some concerns about the template used by the NCCA. As these points are applicable to syllabi in every subject, they are reproduced in some detail here:
  - "In terms of content, the draft specifications, based on themes and learning outcomes, are sparse and lacking in depth. Detailed information is not given about what the teacher is to teach or what the student is to learn. No explanation is given of the depth of learning that should be covered within the themes or topics and teachers are not provided with guidelines or details on assessment." (p. 19)
  - "The learning outcomes should be clear **and** the depth and breadth of knowledge required should also be provided. Teacher guidelines should be provided as well as comprehensive information on the assessment of the subject. It is not sufficient to state that these will be made available at a later date. The consultation is currently underway and feedback is being sought from stakeholders. Worthwhile feedback cannot be given in the absence of this information." (p. 19)
  - "While learning outcomes, if clearly set out, are a useful tool in curriculum design, learning outcomes **alone** are not enough to design a specification for a high-stakes examination such as the Leaving Certificate. Learning outcomes are statements of essential learning, and as such they are written at minimum / threshold (i.e. pass/fail) standard. They do not provide the **range of skills and information** to be provided in any subject." (p.19)
  - "No senior cycle specification should be as bare and lacking in depth as these draft specifications. They merely provide a skeleton with no flesh on the bones and no detailed content." (p. 19)
  - "The NCCA has indicated that the SEC will follow its normal practice and that sample examination papers and marking schemes will not be made available until November 2024, a few months before the first exams based on these specifications in June 2025.This is a flawed approach. Accurate and comprehensive information on the assessment system, oral and written, **should be aligned** from the outset with the content of the specification and provided with the draft specification in advance of the consultation. There must be alignment between learning outcomes, specification content, teacher guidelines and assessment. Information in the draft specifications on assessment comprises two pages and is mainly an account of the weighting of marks. This is a huge shortcoming, and we believe that these draft specifications should not have been published without comprehensive information on the assessment components." (p. 23)

One of the main recommendations made in the report is that the draft syllabi should be set aside:

- “Our advice at this stage would be that any decision on a new specification for Irish in the senior cycle should be set aside until the review of the junior cycle has been completed and the results of the review have been made available. We then ask that the Department of Education, the NCCA and the State Examinations Commission give consideration to the recommendations we have made in this discussion document for the design of a new structure for Irish at senior cycle level, a structure that, for the first time, would cater adequately for the learning needs of all students in the country”. (p. 47)

- **Association of Secondary Teachers in Ireland (2022).** The ASTI issued a questionnaire to their members asking them to document their experience of the implementation of the Framework for Junior Cycle. A total of 2981 teachers responded to the survey and the following extracts from the report indicate the type of comments received:

  - “… it would be an under-statement to say that there is profound and universal concern among teachers about the capacity of the junior cycle subject specifications to prepare students for the senior cycle curriculum. Lack of depth of content knowledge was not the only source of this conviction.” (p. 13)
  - “…. it must be emphasised that even those teachers who expressed positive views, most invariably qualified their comment by expressing concern about students’ progression to senior cycle.” (p. 13)
  - “Lack of depth of knowledge content over the three-year cycle was repeatedly identified by teaches as problematic. Many teachers stated that, several years into the new Framework curriculum, they were unsure if they were teaching the course properly. This is creating confusion and frustration for teachers and is also impacting on their workload.” (p. 14)
  - “Learning outcomes remain problematic. They are too broad, too vague and are lacking in guidance to the teacher on what students are expected to be able to do in order to show that they have achieved each learning outcome. This causes confusion and frustration for both teachers and students adding to workload of teachers.” (p. 14)

Among the recommendations of the ASTI report were:

- A comprehensive independent evaluation of the implementation of the Framework for Junior Cycle needs to be conducted.
- The NCCA and the Department of Education must address teachers’ concerns in relation to the lack of depth of content in the subject specifications.

- **Oireachtas Committee on Education (2022)**. The Joint Committee on Education, Further and Higher Education, Research, Innovation and Science invited written submissions on Senior Cycle Reform from a wide range of stakeholders in education. In addition, it met with many of these stakeholders (ISTA 2021). The report of the committee *Learning for Life* was published in May 2022 and contained ten key report recommendations. The following was the second recommendation listed in the report:

  “As part of Senior Cycle reform, a key priority for the Department of Education must be that the revised syllabus for each subject is far more detailed with comprehensive instructions for teachers. The Committee recommends that the National Council for Curriculum and Assessment (NCCA) reviews the proposed design of the new specifications to ensure teachers are properly supported and students are taught to the highest professional standards.”

  (Oireachtas Committee 2022 p. 11)

In addition to the above, individual teachers voiced their concerns about the quality of syllabi in newapaper articles (O’Brien 2022) and at conference presentations. A video recording of an address by Stephen Murphy on the vague nature of the new Leaving Certificate Computer Science syllabus may be viewed at the URL in the list of references.

At the 2022 ISTA conference in UCC, Mr Humphrey Jones, a teacher of Agricultural Science detailed the problems encountered by him in trying to implement the newAgricultural Science syllabus in the classroom. His experience is reflected in the reports of the Irish Agricultural Science Teachers’ Association (IASTA 2019, 2021). A recording of his presentation may be viewed at the URL given in the list of references.

The above comments from various stakeholders are only some of the concerns which have been and continue to be expressed about the current approach being taken by the NCCA to syllabus design. While the NCCA have indicated that their approach is influenced by ‘international best practice,’ the authors of this paper have failed to find even one example of a jurisdiction or an examining board anywhere in the world which provides such sparse information on the syllabus to be examined.

International trends in syllabus design

Since 1999 a quiet revolution has been taking place in curriculum design in education throughout the world. The seeds of this revolution were set in June 1999 when Ministers of Education of 29 countries convened in Bologna, Italy to formulate the Bologna Declaration. The overall aim of the Bologna Process was to improve the efficiency and effectiveness of education in Europe – initially the emphasis was on higher education but the influence of the Bologna Process has now spread to all levels of education.

One of the main features of the Bologna Process was

the need to improve the traditional ways of describing curricula. Prior to this process, curricula were described in various ways in different countries using terminology such as aims, objectives, goals and competences. However, these are vague terms and are open to interpretation. Hence, it was decided at the meeting of Ministers of Education in Bologna that learning outcomes would be the common language for designing and developing curricula.

The signing of the Bologna Declaration in 1999 by 29 countries put the spotlight on the concept of using learning outcomes as the common language for teaching and learning. A total of 48 countries have now signed this declaration (2023). In addition, the introduction of the European Qualifications Framework for Lifelong Learning (2008) based on learning outcomes provided further momentum to teaching within a learning outcomes framework at primary, secondary and tertiary education. All programmes at primary, secondary and tertiary education in European Union countries and many other jurisdictions are now described in terms of learning outcomes. Thus, learning outcomes have become the common language to describe teaching, learning and assessment within 48 countries. Many other countries around the world have aligned the way they describe their national qualifications to the Bologna Declaration and the European Qualifications Framework in order to assist with international recognition of qualifications and student mobility.

One of the main reasons for embracing the concept of learning outcomes at international level is to bring clarity and coherence to the terminology used in education. Learning outcomes are clearly defined in the language of education and there is a common understanding of this term in the education literature at international level.

Having examined syllabi in many countries around the world, the authors are particularly impressed with the quality of syllabi published for various subjects by the Oxford Cambridge and RSA (Royal Society of Arts) Examination Board (Awarding Body) in the UK. These syllabi are designed within a learning outcomes framework and are mainly implemented within the UK and also at international level through the international GCSE programmes.

The OCR biology, chemistry and physics syllabi have been revised relatively recently and are designed within a learning outcomes framework. An example of how the OCR template may be applied to a learning outcome at Leaving Certificate chemistry level is shown in Figure 1. Note that learning outcomes are a starting point and are expanded by information on depth of treatment in the *Topic Content* column as well as in the *Skills Covered* column. The template emphasises *Teaching and Learning Opportunities* which help guide the teacher in assisting the students to achieve the learning outcomes at the required and relevant depth.

Topic: Electrochemistry in our lives			
Learning outcomes	**Topic Content**	**Skills covered**	**Teaching and learning opportunities (e.g. links with other areas of syllabus, science and society links, etc)**
Describe the reactions that take place in the electrolysis of aqueous solutions.	Electrolysis of acidified water, sodium sulfate solution and potassium iodide solution using inert electrode.	Skills S12, S13, S16, S18, S19, S20 (This column links the LO to the list of skills included in Appendix 1 of the syllabus)	Relate to pH indicators (section 3.4) and test for gases (section 2.3). The production of “green” hydrogen by electrolysis using electricity from renewable resources.

Figure 1. An example showing how a learning outcome at Leaving Certificate chemistry level may be represented using the new template. (Adapted from OCR GCSE Gateway Chemistry p. 46)

An example of a similar template may be found in the OCR GCSE English Literature syllabus, Figure 2. In this template, the learning outcomes are listed as arising from the teaching and learning activities rather than as the starting point.

Having carried out extensive research on curriculum and syllabus design internationally, the authors of this paper conclude that not all subjects have to follow exactly the same design template. There are good examples in the international literature of well-designed syllabi and suggestions as to how such syllabi can be written, taught and assessed[2]. While well-designed syllabi in other jurisdictions include a statement of learning outcomes, they all provide considerably more information and detail about the syllabus requirements than is currently being provided by the NCCA. Regardless of the nature of the subject, a learning outcomes framework can provide a starting point for syllabus design, but learning outcomes alone are not enough. Much more detail must be provided to provide clarity for students and teachers.

2 For example, the Council of Europe has published a comprehensive guide to the Common European Framework of Reference for Languages: Learning, Teaching and Assessment, which could serve as a good guide to writing a new syllabus for languages.

Section A: Exploring poetry and Shakespeare (02)		
Text choice	Content	Learners should be able to:
Poetry across time Choice of one themed poetry cluster from the OCR Poetry Anthology: • Love and Relationships • Conflict • Youth and Age.	There is a choice of three thematic poetry clusters for study in the OCR Poetry Anthology, each comprising a diverse range of poems since 1789 drawn from modern and literary heritage poets and covering different styles, poetic genres and thematic elements. Learners develop comprehension skills. Learners take a skills-based approach to engaging with and responding critically to a variety of poetry. Learners explore how poets use key features to present ideas, themes and settings and learning to differentiate between literal and implied meaning.	Learners are expected to respond to some of the following: • themes, ideas and issues • atmosphere, tone and attitude • appeal to the senses • language • imagery • form and structure. • pay attention to the details of a text: understanding the significance of a word, phrase or sentence in context • demonstrate the ability to read at a literal level and also explore deeper implications • explain motivation, sequence of events and the relationship between actions or events.

Figure 2. An example of a learning outcomes framework approach to syllabus design for the OCR GCSE English Literature syllabus (p. 11).

Does the Leaving Certificate Need to be Reformed?

There is widespread agreement among education stakeholders in Ireland that reform of the Leaving Certificate is necessary. Many subject syllabi are outdated and need to be reformed to reflect recent research findings and to prepare students for the needs and challenges of the future. However, there is also widespread agreement that the current Leaving Certificate has many good features that should be retained and that Ireland should not "throw out the baby with the bathwater".

In a recent interview in the journal of the National Association of Principals and Deputy Principals, *Leader,* Andreas Schleicher, Head of the OECD's Directorate of Education and Skills, and an expert on educational systems worldwide, urged caution when it comes to senior cycle reform in Ireland. He stated: "The Leaving Certificate is a high stakes exam but that is part of the secret of the success of Ireland. By setting a very high bar, you get people to think that hard work is valued in education" (Schleicher 2022). He argued that the Irish educational system has helped most people to succeed and has created a high level of equity with very strong outcomes. He favours maintaining an externally assessed Leaving Cert. and highlights the importance of an examination that is "accepted by society".

In a different context, when Schleicher was asked to compare the curriculum in Asian countries such as China with the curriculum in high schools in the U.S., he advised against adopting a curriculum which is "a mile wide and an inch deep". In the view of the authors of this paper, the current approach in curriculum design being taken by the NCCA is in danger of reducing the Leaving Cert. curriculum to one which could become " a mile wide and an inch deep". To avoid this, it is our view that it is essential that when designing Leaving Cert subject syllabi, explicit details should be provided about the depth of treatment required as well as detailed documentation and guidelines for teachers and students to support them in achieving the desired outcomes.

Conclusions and recommendations

The authors of this paper support the concept of learning outcomes and of designing syllabi within a learning outcomes framework. But in Ireland, problems have arisen as a result of a "learning outcomes only" approach being adopted by NCCA in syllabus design. As already outlined, the "learning outcomes only" approach has caused problems in the classroom due to the lack of clarity for teachers on what subject content should be taught to the students and the depth to which the content should be taught. As a result, different teachers interpret the learning outcomes differently (and may have been encouraged to do so in some CPD programmes) – and the interpretation of learning outcomes by the State Examinations Commission may differ from that of some teachers. This has led to a situation where for some students and teachers there is a lack of alignment between the syllabus as they interpreted it, and the questions on the Junior Cycle or Leaving Certificate examination papers.

Learning outcomes are a valuable tool for identifying what learners should know, understand and be able to do at the end of a lesson or programme. However, it is not appropriate to use learning outcomes alone to define a syllabus and its assessment, especially for a nationally assessed curriculum. Learning outcomes are statements of essential learning, and as such they are written at minimum acceptable or threshold (pass / fail) standard (Moon undated). If teachers focus only on learning outcomes, there is a real risk that the teaching and learning targets will be at a minimum rather than a maximum level, that the bar will not be set high enough for student learning, and that as a result, standards will fall. This "dumbing down" of standards has been referred to by teachers across many subjects at Junior Cycle level.

It is not the role of the teacher to interpret or "unpack" learning outcomes as was recommended to teachers in the provision of CPD programmes at Junior Cycle level. The experience of teachers should be listened to and their views treated with respect. As pointed out in the reports referred to earlier in this paper (ISTA 2019, IASTA 2019 2021, ASTI 2022), the new Junior Cycle syllabi and those Leaving Cert syllabi which have been revised to date are vague and unclear. They can be and have been interpreted in different ways by different teachers and the preliminary findings of the reviews of the Junior Cycle examinations in 2022 suggest that there was a lack of alignment between the syllabi in some subjects and the examination papers in summer 2022.

Arising from the above discussion and the experience of teachers we make the following recommendations, most of which have already been made in other reports:

1. A new syllabus template needs to be developed for all syllabi at Junior Cycle and Leaving Certificate level. This template must contain more detailed information about the depth of treatment of subjects including the linking of learning outcomes, to teaching and learning activities and to assessment. In other words, constructive alignment (Biggs 2005) needs to be embedded in all syllabi as shown in Figure 3 on p. 17.

2. **The full range of documentation must be available before implementation of the syllabi**. The full range of syllabus documentation (including teachers' notes, sample examination papers, sample marking schemes, etc.) should be officially published at the same time as the syllabus itself, under the logo of the DES as has been the case in the past. This elaborated documentation should be available well before the syllabus is due to be implemented, to enable teachers to become familiar with the new material and to undergo appropriate CPD (continuing professional development) and up-skilling programmes.

3. Depth of treatment embedded within the syllabi. From 1989 until recently, Leaving Certificate syllabi included the level of detail that teachers expect and need to enable them to prepare their students for the Leaving Certificate public examinations.(Lucey 2020) That level of detail has also been used and will continue to be required by the SEC to enable them to set and mark the Leaving Certificate examination papers. It is essential that that current "learning outcome only" vague template be immediately abandoned and a more appropriate template be implemented.

4. Continuation of syllabus subject development groups. We recommend that the present structure of syllabus subject development groups should continue. These committees should be reconvened to begin the work of redesigning all subject syllabi, using the new template. These subject development groups should continue to be involved in the identification and where relevant, the development of resources to support the new subject syllabi. Members of subject development groups contribute invaluable expertise and experience, on a pro bono basis, to Irish education. They help to bridge the gap between theory and practice, between the ideal and the possible. Teachers, in particular, have an important role to play as they are at the chalk-face on a daily basis and bring knowledge of the on-the-ground constraints to the discussion. Third level and employer representatives help to ensure that the revised syllabi prepare students appropriately for further learning and for work. The partnership model has served Irish education well in the past and will hopefully continue to do so in the future.

5. Sharing of syllabus documentation from other countries. Consideration should be given by the Minister to collaborating with other bodies, nationally and internationally, to provide appropriate state-of-the art materials thus avoiding unnecessary and expensive duplication or "re-inventing the wheel". This may be more relevant to some subjects than to others. For example, as science subjects are less culturally bound than some other subjects, resources developed for science teaching in one country are likely to be relevant and suitable for teachers and students in another country.

It is our earnest wish that the above recommendations be implemented as quickly as possible in a collaborative and diligent way that is respectful of the views of teachers and of other stakeholders in the world of education.

APPENDIX 1

Examples of skills to be developed in the syllabus

Code	Skill
S1	Comprehension of how scientific methods and theories develop over time
S2	Use of models to solve problems
S3	Development of scientific explanations
S4	Making predictions
S5	Comprehension of limitations of science
S6	Comprehension of ethical issues arising from developments in science
S7	Communication technological applications of science
S8	Evaluate personal, social, economic and environmental implications of science.
S9	Decision making based on the evaluation of evidence and arguments
S10	Inferring ethical issues arising from developments in science
S11	Using scientific theories and explanations to develop hypotheses
S12	Planning experiments or devising procedures to make observations and test hypotheses.
S13	Application of knowledge of a range of techniques, instruments, apparatus and materials to select those appropriate to the experiment
S14	Interpreting a set of instructions for scientific procedures.
S15	Measurement of a range of variables in different contexts
S16	Interpreting observations and scientific data.
S17	Presenting observations using appropriate methods to include descriptive, tabular diagrammatic and graphically
S18	Observation of a range of scientific phenomena.
S19	Drawing conclusions based on the analysis of data.
S20	Working safely in the school laboratory.

(Adapted from OCR GCSE Chemistry p. 73 -76)

APPENDIX 2

Examples of OCR GCSE syllabi

OCR GCSE Biology

https://www.ocr.org.uk/qualifications/gcse/gateway-science-suite-biology-a-j247-from-2016/

OCR GCSE Chemistry

https://www.ocr.org.uk/qualifications/gcse/gateway-science-suite-chemistry-a-j248-from-2016/

OCR GCSE Design and Technology

https://www.ocr.org.uk/qualifications/gcse/design-and-technology-j310-from-2017/

OCR GCSE English language

https://www.ocr.org.uk/qualifications/gcse/english-language-j351-from-2015/

OCR GCSE English literature

https://www.ocr.org.uk/qualifications/gcse/english-literature-j352-from-2015/

OCR GCSE Food Preparation and Nutrition

https://www.ocr.org.uk/qualifications/gcse/food-preparation-and-nutrition-j309-from-2016/

OCR GCSE Mathematics

https://www.ocr.org.uk/qualifications/gcse/mathematics-j560-from-2015/

OCR GCSE Physics

https://www.ocr.org.uk/Images/234600-specification-accredited-gcse-gateway-science-suite-physics-a-j249.pdf

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IASTA (2021) *IASTA Submission to Joint Committee on Education, Further and Higher Education, Research, Innovation and Science*

Available at https://iasta.ie/ and also at p. 230 – 236 at: https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/joint_committee_on_education_further_and_higher_education_research_innovation_and_science/submissions/2022/2022-05-10_submissions-various-individuals-and-organisations_en.pdf

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SUMMARY GUIDELINES FOR WRITING LEARNING OUTCOMES

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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.



Fig. 2 Action verbs in the cognitive domain

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.
4. Programme Learning Outcomes should map on to the appropriate level of the National Qualifications Framework.



Fig. 1 Learning Outcomes in the Cognitive Domain (knowing, thinking)

Learning Outcomes in the Affective Domain

Bloom also proposed a taxonomy for writing Learning Outcomes in the affective domain. Verbs include: Appreciate, accept, assist, attempt, challenge, combine, complete, defend, demonstrate (a belief in), discuss, dispute, embrace, follow, hold, integrate, order, organise, join, share, judge, praise, question, relate, share, support, synthesise, value.

Learning Outcomes in the Psychomotor Domain

The psychomotor domain refers to practical skills. High levels of psychomotor skills are required by professionals such as surgeons, artists, musicians and laboratory scientists.

If the psychomotor domain is relevant to your subject discipline, the following list of verbs may be helpful: bend, grasp, handle, operate, manipulate, perform, reach, relax, shorten, stretch, differentiate (by touch), perform (skilfully).

Aims and Objectives

The curriculum can be described in terms of aims and objectives, which is a more teacher-centred approach. Aims are long term and general, and relate to programmes. Objectives are short term, specific and relate to modules.

Aims and objectives are written using phrases such as:

- To give students an understanding of...
- To make students familiar with...
- To ensure that students know...
- To enable students to experience...

What number of Learning Outcomes?

- 5 to 8 Learning Outcomes per module
- 5 to 10 Programme Learning Outcomes

Aligning Learning Outcomes to Teaching and Learning activities and to Assessment

Having written the Learning Outcomes for your students, always ask yourself how each Learning Outcome will be assessed. The Learning Outcomes we write should always be linked to teaching and learning activities and to assessment so that these various elements are aligned. This is known as constructive alignment and ensures thoughtful design of the curriculum (Fig. 3).

The key question is **What must the students be able to DO in order to show that they have achieved the Learning Outcome?** Details of how to check for constructive alignment using a simple three-column table are given in the online resources specified below.

Learning Outcomes are the common language in Education. ECTS credits are the common "currency" or reward that students receive for achieving the Learning Outcomes.

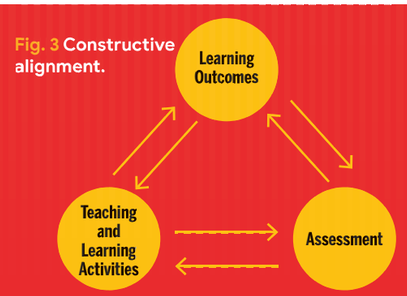


Fig. 3 Constructive alignment.

For more details and support visit
www.ucc.ie/en/cirtl/resources/learningoutcomes/
Writing and Using Learning Outcomes – A Practical Guide Available from cora.ucc.ie/handle/10468/1613

To further enhance your practice, join CIRTL's level 9 programmes on Teaching and Learning in Higher Education
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