Ten Years after the Hyland Report:
Achievements so Far and future Challenges

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Ten years ago this author presented a paper at the annual conference of the Irish Science Teachers' Association (ISTA) entitled "*The design of Leaving Certificate science curriculum: an international comparison".* At that time the National Council for Curriculum and Assessment (NCCA) had introduced a new curriculum for Junior Cycle which was challenging for students and teachers because of its vagueness and lack of clarity. The template which the NCCA had used to design the subject syllabi consisted only of themes and learning outcomes and teachers were concerned that the same template would be used to design new Leaving Certificate syllabi. The paper presented by this author in 2014 (subsequently referred to as the Hyland report) looked at curriculum design in various English-speaking jurisdictions around the world but failed to find even one example of the syllabus design being used by the NCCA. This author cautioned against using the Junior Cycle template for new or revised Leaving Cert subjects.

Problems with Junior Cycle curriculum

Despite the misgivings that had been expressed, the contested template was used by the NCCA in subsequent years for new and revised Leaving Certificate subjects. It was used for the revised syllabus for Agricultural Science which was introduced in 2017 and for the syllabi for new subjects such as Computer Science and Physical Education. Students and teachers expressed misgivings about the vagueness of these syllabi and their lack of clarity. When the subjects were examined for the first time, serious concerns were expressed about the lack of alignment between the NCCA specifications and the examinations set by the State Examinations Commission (SEC).

Various articles in the journal *Science* highlighted teacher concerns about both junior cycle and senior cycle syllabi. In Nov. 2019, Declan Kennedy wrote an article entitled "*Moving from Junior Cycle Science to the Leaving Certificate Sciences"* in which he articulated these concerns. In February 2020, a special ISTA conference "*From JC science to LC Sciences: Issue and Challenges"* was held. The November 2021 issue of *Science* included a submission from ISTA to the Joint Oireachtas Committee on Education summarising the shortcomings of the approach being taken by the NCCA to senior cycle reform. And various articles in the May/November edition 2023 discussed the implications of the revised Agricultural Science syllabus and the new Computer Science syllabus for the new Leaving Cert Science subjects.

A number of subject associations, including the Irish Agricultural Science Teachers Association (IASTA) and An Gréasán (the association for teachers of Irish) published reports highlighting the issues that they had encountered with the new design. In 2022, the Association of Secondary Teachers in Ireland produced a report entitled "*Teachers Experience of the Implementation of the Framework for Junior Cycle*". In summary, the report concluded that "it would be an understatement to say that there is a profound and universal concern among teachers about the capacity of the junior cycle subject specifications to prepare students for the senior cycle curriculum" adding "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".

The Joint Oireachtas Committee on Education in two different reports ("*Learning for Life*" in 2022 and "*The Future of STEM in Irish Education"* in 2023) drew attention to the problems associated with the template being used by the NCCA. The committee advised that the Department of Education should publish revised specifications for biology, chemistry and physics at senior cycle before the end of 2023 stating that "A key priority should be that the revised syllabus for each subject is far more detailed with comprehensive instructions for teachers". It recommended that the "National Council for Curriculum and Assessment reviews the proposed design of the new specifications to ensure that teachers are properly supported and students are taught to the highest professional standards".

Proposals for Senior Cycle Reform, 2022 and 2023

In March 2022 Minister for Education Norma Foley set out her proposals for senior cycle reform in a document *"Equity and Excellence in Education"*. She indicated that the emphasis on the Leaving Certificate terminal examination would be reduced by introducing assessment other than a terminal examination in all subjects. In the case of English and Irish she proposed that Paper One would be examined at the end of Fifth Year and Paper Two at the end of Sixth Year. When it became clear that this proposal could not be implemented, the Minister issued revised proposals in September 2023. She stated that from 2025 students "would benefit" from an earlier rollout of nine new and revised subjects including biology, chemistry and physics – the new syllabi to be examined for the first time in 2027. She stated that each subject would incorporate externally assessed components worth not less than 40% of the overall marks (to be examined by the State Examinations Commission) that would not be a traditional written examination.

NCCA Publications on Senior Cycle Reform, 2022 and 2023

Various papers on senior cycle reform were published on the NCCA website during 2002 and 2003. These included a paper published in July 2023 entitled *Key Competencies in Senior Cycle Design* – which set out the key competencies as Managing Learning and Self; Thinking and Solving Problems; Being Creative; Communicating; Working with Others; Participating in Society; and Cultivating Wellbeing. Literacies and Numeracy were included as an overarching competency. This "competencies framework" would inform new and revised Leaving Cert syllabi and would supersede an earlier Senior Cycle framework document *Senior Cycle Key Skills Framework* which had been published in 2009.

In December 2023 the NCAA published a further paper entitled *Technical Form of Curriculum Design.* This was a comprehensive research paper, the terms of reference of which were "To examine relevant research and practice to help decide what format the NCCA should use when designing curriculum specifications for Senior Cycle". The research did not focus on externally-examined curricula nor did it address the issue of assessment. The document made it clear that "the research is not intended to be indicative of

what might be asked or how questions might be framed in external written examinations". The paper included an analysis of how each of five different jurisdictions designed their senior cycle curriculum. The jurisdictions chosen were New Zealand; Ontario (Canada); Queensland (Australia); Scotland and Wales. It is notable that in the first three jurisdictions, student performance at senior cycle is assessed at school level by teachers. In the other two jurisdictions—Scotland and Wales—student performance at the end of senior cycle is externally assessed, therefore these jurisdictions are the more appropriate comparators for Ireland. However, because of concerns which have arisen about the technical form of syllabi in Scotland and Wales, as well as problems about alignment with the national externally assessed examination, both of those jurisdictions are currently reviewing and revising their approach to syllabus design and assessment.

Arising out of the findings of the research on the technical form of curriculum design, the NCAA proposed that the format of subject specifications in future should be as follows:

- Senior Cycle – purpose, vision and guiding principles;
- Rationale;
- Aims;
- Continuity;
- Key Competencies;
- Teaching and Learning;
- Strands of Study and Learning Outcomes;
- The specification for each subject will also include sections on Assessment; Assessment for certification; Additional Assessment Component (AAC); Descriptors of quality for AAC; Written examination; Leaving Cert Grading.

Lessons from Scotland:

A new curriculum *Curriculum for Excellence* had been introduced in Scotland in 2010, which reduced the content knowledge of the curriculum and organised it around a set of "content free skills statements". Teachers said that they found the wording of the learning outcomes vague and difficult to interpret. In addition, recent performance of Scottish students in the international OECD Pisa tests showed a significant fall in student performance and some critics attributed this to the change in the design of the curriculum. Referring to this criticism, Keith Bloomer, one of the architects of *Curriculum for Excellence*, said: "The problem is we did not make sufficiently clear that skills are the accumulation of knowledge: *without knowledge there can be no skills".* There were also difficulties in Scotland arising out of the lack of alignment between the *Curriculum for Excellence* set by Education Scotland, and the external examinations, set by the Scottish Qualifications Authority, which led to the amalgamation of the two bodies. As a result, the Scottish government, on the advice of the OECD, decided in 2022 to review their approach to curriculum and to amalgamate the two bodies responsible for curriculum and assessment - *Education Scotland* and the *Scottish Qualifications Authority*. This amalgamation is ongoing.

New and Revised Leaving Certificate Subjects in Ireland

In Ireland, following the decision of Minister Norma Foley in September 2023 to expedite the introduction of new and revised Leaving Cert syllabi, the NCAA issued draft syllabi / specifications for nine subjects – Biology; Chemistry; Physics; Business; Arabic; Ancient Greek; Latin; Drama, Film and Theatre Studies, and Climate Action and Sustainable Development. The revised "technical form of design" proposed in the NCCA's December 2023 research paper, has been used to design all these subjects. It is worth noting that the text under most of the headings is largely generic and very similar in all nine syllabi. The substantive subject matter of each syllabus (the "real meat of the syllabus") is contained in the section headed Strands of Study and Learning Outcomes. Unlike Junior Cycle specifications where there was only one column on learning outcomes, there are now two columns – the first column is headed "students learn about" and the second column is headed "students should be able to".

A learning outcomes approach to curriculum design is now widespread across the world – and can be effective provided that the learning outcomes are clear, comprehensive and that they encompass higher order thinking as well as basic facts. This author has spent many years advising and supporting teachers both at second and third level on how to write clear learning

outcomes and has found the guidelines provided by Declan Kennedy in the publication *Practical Guide to Writing and Using Learning Outcomes"* very helpful. This Guide which was published almost twenty years ago has been translated into fifteen languages and is one of the most widely read publications on this topic. It has been downloaded more than 60,000 times from the Cork Open Research Archive (CORA) – an open access repository - and has been read on the website Academia.ie more than 50,000 times.

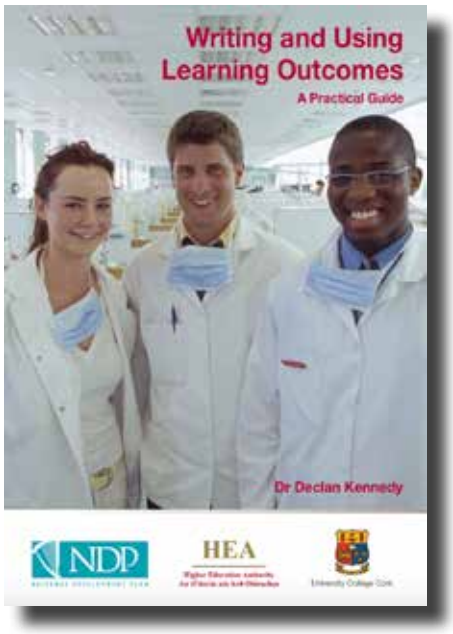

Figure 1: The title cover of the book Writing and Using Learning Outcomes: A Practical Guide by Declan Kennedy.

In the NCCA's new and revised syllabi, and in line with the Minister's proposal about assessment, each syllabus includes an additional assessment component (AAC) worth at least 40%. 40% is allocated for each of the three science subjects and for Business and Climate Action and Sustainable Development and 50% is allocated for the AAC in Drama, Film and Theatre studies. It is of note that the subject development groups for the science subjects had recommended that 20% be allocated for an AAC and that in the case of subjects which have already been revised 25% is allocated for the AAC in Agricultural Science, 20% for Applied Maths and 30% for Computer Science.

The consultation period for the three science syllabi is now over but the NCCA has not yet published the submissions and responses received. However, a recently published report by the Irish Science Teachers' Association prepared in response to the draft specification in biology, chemistry and physics which includes a forensic analysis of the draft specifications for the three science subjects suggests that there are many shortcomings in the current drafts. This concern is also echoed in a submission made by the representatives of the Irish Universities Association who are members of the three subject development groups. These submissions make the point that learning outcomes in all three subjects lack clarity and there is concern that the allocation of 40% of the assessment marks to an AAC is excessive. Of particular concern is the advantage that such a high proportion of marks for AACs will inevitably confer on students from socially and educationally advantaged backgrounds. Regardless of how carefully a student's work outside a supervised examination hall is monitored, students who have additional support and resources and/or access to additional advice and teaching outside school will be at a considerable advantage when preparing their AAC. Generative AI (e.g. ChatGPT) will exacerbate this advantage and will also make it virtually impossible for either the classroom teacher or the state examiner to verify or ensure that a student's project work is entirely their own work.

There is also concern about the lack of detail

in the specifications and especially about assessment. Good practice in curriculum and syllabus design requires what is referred to as "constructive alignment" between learning outcomes, teaching and learning activities and assessment. Learning outcomes should be clear and precise and should be linked to teaching and learning activities as well as to how learning outcomes will be assessed. Assessment details (e.g. sample papers and grading criteria) should be provided at the same time as the syllabus details and the teaching and learning activities. The three elements of curriculum design need to be determined simultaneously, ideally by the same team, or if not, by three teams working closely together:

Constructive Alignment in Curriculum Design

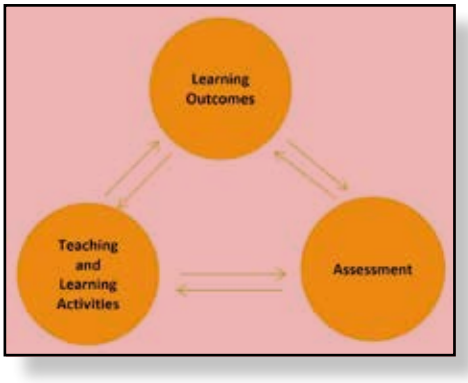

Figure 2. *Constructive alignment in curriculum design involves the linking of teaching and learning activities to learning outcomes and to assessment*

An Example of an Exemplary Senior Cycle Curriculum – the IB Diploma

The International Baccalaureate is a good example of a well-designed curriculum and could have been a good exemplar for the NCCA. The IB Diploma curriculum is revised every seven years and the most recently revised syllabus was implemented in IB schools in September 2023 - to be examined for the first time in 2027. The revised syllabi were completed and disseminated a year before they came into effect and as has always been the case with the IB Diploma, detailed information on individual syllabi and on their assessment was made available for teachers and textbook publishers well before the implementation date. The Biology Guide covers 133 pages; the Chemistry Guide has 96 pages and the Physics Guide is 84 pages. Links are also available to other publications and online materials which teachers would find useful. The syllabi include detailed information on assessment including rubrics and sample questions. Before the curriculum is implemented in schools teachers were required to undertake training in the new syllabi.

The importance of close collaboration between the NCCA, OIDE and the SEC

In Ireland, there are three separate bodies with responsibility for the three elements of curriculum design – learning outcomes, teaching and learning and assessment. The NCCA is responsible for finalising the learning outcomes of each subject; the SEC is responsible for assessment and the newly formed OIDE (a CPD and support service for teachers) provides upskilling and training for teachers and collaborates in preparing guidelines on teaching and learning activities. While having three separate bodies dealing with curriculum revision is not ideal, constructive alignment could in principle be ensured and confusion prevented if the three bodies work closely together and collaborate closely with teachers **before** any new curriculum is implemented.

In the coming months the Subject Development Groups (SDG) for physics, chemistry and biology will be reconvened to take account of the submissions made in relation to the draft syllabi and to finalise the specifications. It is to be hoped that the concerns expressed and the suggestions made by respondents to the draft syllabi will be heeded and acted on. While the voices of all stakeholders were relevant when the overall senior cycle framework was drawn up the voices of those on the subject development groups who have specialist subject and pedagogic knowledge and experience, especially teachers, should be listened to and respected. The representatives on the SDGs from the State Examinations Commission should also play a central role in finalising the subject specifications and the assessment information should be expanded to include sample questions and criteria for each Leaving Certificate grade.

About the Author

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