



**NCCA**

An Chomhairle Náisiúnta  
Curaclaim agus Measúnachta  
National Council for  
Curriculum and Assessment

# The technical form of curriculum specifications for subjects and modules in a redeveloped Senior Cycle

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## Executive summary

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### Introduction

The purpose of this paper is to examine relevant research and practice to help decide what format (a.k.a. technical form) NCCA should use when designing curriculum specifications for senior cycle. This paper provided the research basis for the creation of a template to be used by development groups as they review and (re)develop senior cycle subjects and modules. Development groups provided feedback during the development process to help refine the template.

The paper includes five chapters covering:

1. curriculum theory
2. a history of the technical form of syllabi/specifications in Ireland
3. comparisons with the technical form used in a range of jurisdictions internationally
4. research and teacher feedback on the technical form of existing Leaving Certificate specifications and
5. key competencies in a redeveloped senior cycle.

The paper is structured in this way to respond to Luke, Weir and Woods observation (p9, 2013) that curriculum bodies make decisions about the technical form of their documents based on

- research on the *technical form* of curriculum syllabi/specifications (chapters 1 and 4)
- precedent, existing practice and previous syllabi (chapters 2 and 3)
- analysis of practice in other jurisdictions (chapter 3)
- teacher feedback on the formats they find useful (chapters 4 and 5).

In this paper, the term 'technical form' refers to how national curriculum specification documents for subjects and modules are organised. It includes the categories used and the layout of the documents, under specific headings. It also includes the approach taken within each section of these documents, as the heading alone does not provide insight into how each section is or should be approached and why a particular approach may be considered the most appropriate. Stephen Petrina (2004) argues that the technical form of a curriculum is concerned with how it should be organised (the *realpolitik* of form) rather than with what should be learned (the politics of knowledge, skills and values/dispositions), or with who should learn what (identity politics), though clearly decisions about the format/technical form intersect with questions relating to the position of knowledge, skills, values and dispositions in the curriculum.

### Chapter 1: curriculum theories

Understandings of curriculum have changed and evolved over time, as curriculum became a field of study in its own right. Much of the focus of curriculum theory has been on what should be learned and on who should learn what. There has been less focus on how a curriculum should be organised a.k.a. its 'technical form'. Hilda Taba in 1962 proposed that instead of arguing for the primacy of subject content, skills, the needs of learners or the needs of society, a curriculum should find a way to combine them in a comprehensive and coherent way. This idea of combining different elements in a curriculum document is reflected in many curriculum syllabi/specifications both nationally and internationally, as illustrated in chapter 3. While research may separate out and label various approaches towards organising a curriculum (see table 1), in practice, elements

of each of these ideologies/orientations/models often co-exist within curricular documents (see chapter 3) rather than one taking precedence over all others.

3 Curriculum ideologies Kelly (1977)	5 Curriculum orientations Petrina (2004)	5 Curriculum models Luke, Weir and Woods (2013)
Curriculum as <i>content</i> and education as <i>transmission</i>	Academic rationalism	Traditional content based
Curriculum as <i>product</i> and education as <i>instrumental</i>	Cognitive processes	Outcomes based
Curriculum as <i>process</i> and education as <i>development</i>	Self-actualisation	Process-based, developmental
	Social reconstruction / critical pedagogy	Critical theory based
	Utilitarian	Generic skills based

**Table 1:** Curriculum orientations and models (Kelly 1977; Petrina 2004; Luke, Weir, Woods 2013)

When a curriculum template is being populated, those involved can approach the task from a range of curriculum traditions, as outlined in Table 2 below. The individuals within the development groups who design curriculum specifications; the stakeholders who review and provide feedback on these specifications and on the wider senior cycle curriculum in its entirety; and those who participate in public consultations on phases of education and on draft specifications, likely have varying orientation(s) towards and beliefs about curriculum, curriculum development and curriculum making. This inevitably presents challenges when designing a national curriculum document but also potentially enriches the process, as diverse perspectives are considered and feed into the draft and final versions of specifications. The tradition which best describes the process used by NCCA is the deliberative tradition.

4 curriculum traditions Reid (2006)	
Systemic	Seeks an approach which works in all contexts and with all subjects
Existentialist	Focuses on the experiences and autobiography of learners
Radical	Critiques and rejects the institutions of curriculum and schooling
Deliberative	Recognises the value of the other traditions and deliberates to achieve consensus

**Table 2:** Curriculum traditions (Reid, 2006)

There are many different ways to describe the processes used to create a specification (table 3).

Luke, Weir and Woods (2013) – process	Alvunger et al (2021) – features of good quality curriculum-making
1. a review of current specifications and best practice in the field	Participatory
2. participatory curriculum-making to write the official document	Accountability based on trust
3. a process of trial, feedback and revision	Importance of middle-ground and mobility

	Balanced regulation – sufficient guidance as well as room for dialogue
	Agency in the education system

**Table 3:** Processes and features of curriculum development and curriculum making.

Taking into account the diversity of perspectives and beliefs about curriculum which exist, Luke, Weir and Woods (2013) propose a hybrid approach to the technical form of curriculum specifications. They reject the alternative, that of using just one model, which all teachers are then expected to adopt irrespective of their values and beliefs, because this would, by design, alienate at least some of the teachers who will be using the curriculum specification to inform their teaching, and student learning and assessment. However, it is understandable that in cases where individual teacher's beliefs about curriculum and education fall firmly into one ideology, orientation or model (see table 1, pg. 2), these teachers may find a hybrid approach challenging.

It is noteworthy that Luke, Weir and Woods recommend a hybrid approach, as Gleeson (2021) argues that Ireland has two distinct curriculum cultures at work (see table 4 below), namely an Anglo-Saxon/American curriculum culture and a Didaktik curriculum culture, whose interplay has already led to a hybrid curriculum culture in Ireland.

Anglo-Saxon/American curriculum culture	Didaktik curriculum culture
Focus on subjects	Focus on student formation and wellbeing
Emphasis on skills	Emphasis on autonomy in learning
Detailed learning outcomes	Flexible and adaptable learning
Purpose of education is developing human capital to enhance employability and economy	Purpose of education is coming to be more fully yourself and participating in society
Knowledge is value-free, same for everybody	Knowledge is never neutral or value-free

**Table 4:** Processes and features of Anglo-Saxon/American and Didaktik curriculum cultures

The most appropriate organisation or technical form of curriculum specifications in a redeveloped senior cycle will thus likely be a hybrid one. Before considering this in more detail, it is important to establish how the technical form of curriculum syllabi/specifications for senior cycle subjects/modules have evolved over time and this is the focus of chapter 2.

## Chapter 2: Curriculum syllabi/specifications in Ireland 1920 -2010

This chapter traces the evolution of the technical form of curriculum syllabi/specifications at senior cycle over several decades. The Department of Education's *Rules and Programme for Secondary Schools* served from the 1920s to the 1980s as a curriculum document for the entire Leaving Certificate programme, setting out syllabus and assessment arrangements for each subject. Curriculum syllabi in this era were extremely short, averaging 4 pages, and consisted of little more than broad indicators of subject content and information about final examinations.

During the 1980s and beyond, the Curriculum and Examinations Board (CEB) and latterly the National Council for Curriculum and Assessment (NCCA), moved thinking about curriculum beyond what might be termed substantive subject knowledge or content. Curriculum became a more prominent field of study nationally and internationally, and the technical form became more

sophisticated, with rationale, aims and objectives for subjects enunciated in more detail, and the articulation of outcomes for students also becoming increasingly evident. In the 1990s and into the early 2000s, discrete syllabus documents were published for each subject/module, supported by teaching guidelines that offered guidance in pedagogical and assessment approaches. The range of subjects on offer in schools expanded; different programmes were designed, reflective of broader societal changes; and the approach to the technical form of curriculum syllabi/specifications evolved further. An increased focus on learning outcomes and key skills across senior cycle is evident. The technical form embraced variations to support the Leaving Certificate Vocational Programme and the Leaving Certificate Applied. Assessment included greater variation in modes of assessment that, in many but not all subjects, moved beyond terminal examinations as the sole source of assessment for certification.

A common technical form and template across senior cycle emerged after 2010. This template aimed to support increased curriculum coherence and resonances across subjects and curriculum components. The learning outcomes model as a means of articulating what students should know, understand or be able to do following their study of a subject or module was adopted, framed within the broader learning goals of the programme with which they are engaged. This brief survey of historical developments provides a useful context for considering the technical form of curriculum syllabi/specifications in the following chapters of this paper.

### **Chapter 3: comparing specifications in Ireland and other jurisdictions**

Comparing curriculum specifications from other jurisdictions with recently developed senior cycle specifications can provide policy learning relevant to decisions about what format (a.k.a. technical form) NCCA might use for senior cycle curriculum specifications. A number of conclusions can be drawn from analysis of specifications from New Zealand; Ontario (Canada); Queensland (Australia); Scotland and Wales, though jurisdictions not explored in this paper may take different approaches.

- The technical form of the curriculum is influenced by the context in which it is developed, such as the jurisdiction's educational history, culture and traditions; the balance between internal and external assessment; the remit of the agency that develops it etc.
- The technical form of curriculum specifications across jurisdictions have become more uniform over time, particularly in the last 10-15 years.
- Internationally, in the jurisdictions studied, there remains scope for differences between specifications depending on the subject or module in question.
- A greater level of scaffolding of learning outcomes is evident in most other jurisdictions, particularly where either internal assessment or a combination of internal and external assessment exist. This scaffolding varies greatly from jurisdiction to jurisdiction and subject to subject; sometimes it takes the form of sample questions, issues, problems, prompts or examples (in the case of Ontario) or suggested classroom experiences/ activities in the case of Scotland. In Wales, amplifications are provided, although this is only in certain subjects, such as Business Studies, while in Queensland some specifications, such as Biology, include a guidance column which runs alongside the column which details the learning outcomes.
- The detail provided to scaffold learning outcomes tends to be tailored to the subject in question and is often influenced by whether or not the learning will be assessed internally or externally. For example, where sample prompts, problems and questions are provided, this is usually intended to support school-based assessment and is not indicative of what



might be asked in an external assessment. Where samples issues and examples are provided, these are intended to support and scaffold understanding of the intended learning, rather than restrict. In Ontario specifications, for example, it states that 'Both the examples and the teacher prompts are intended as suggestions for teachers rather than as an exhaustive or a mandatory list. Teachers can choose to use the examples and prompts that are appropriate for their classrooms, or they may develop their own approaches that reflect a similar level of complexity. Whatever the specific ways in which the requirements outlined in the expectations are implemented in the classroom, they must, wherever possible, be inclusive and reflect the diversity of the student population...' (Ontario curriculum, The Arts, 2010).

- It is also important to note a clear trend evident in the jurisdictions studied, namely that scaffolding of learning outcomes appears to be designed to support teacher planning and internal school-based assessment and is not intended to be indicative of what might be asked or how questions might be framed in external written examinations.
- While this paper has considered current approaches to scaffolding learning outcomes used in each of the jurisdictions explored, it is worth noting that Scotland and Wales are both currently reviewing their curricular approach.
- The extent to which pedagogies are included in curriculum specifications and/or guidelines and the level of detail they provide varies hugely from jurisdiction to jurisdiction and from subject to subject.
- There is an emerging sense that additional support is required for enactment, particularly where school-based summative assessment exists. Further and ongoing consultation with teachers will help to establish the most appropriate supports for a redeveloped senior cycle.
- It is not always clear who the target audience for curriculum specifications is intended to be. The language used sometimes suggests that teachers are the intended audience, while in others the target audience seems to be all stakeholders.
- While there is no uniform approach across jurisdictions to the technical form of curriculum specifications, there are common features which include:
  - an introduction and/or rationale
  - aims and objectives
  - key skills or core competencies
  - recognition of diversity among learners
  - a section on teaching and learning/ pedagogy
  - strands of study
  - learning outcomes (scaffolded in a range of different ways)
  - approaches to assessment
  - description of achievement standards
  - a glossary of key terms and definitions.

In many ways this is similar, with some exceptions, to the hybrid approach to the technical form of curriculum specifications proposed by Luke, Woods and Weir, as outlined in chapter 1. Based on the review of jurisdictions, it is suggested that the area most in need of further development is the scaffolding of learning outcomes in specifications and/or in additional supports. Other jurisdictions have taken a number of approaches to this. Of the approaches explored in this paper, three options to consider when deciding on the template for senior cycle curriculum specifications in Ireland include the use of:

1. overall strand expectations which clarify the learning, and detail what students will demonstrate as a result of engaging with the learning in that strand.
2. sample issues or examples or prompts (where appropriate), developed for the Irish context.
3. a 'students learn about' column which provides significantly more detail than the column included in more recent specifications (2018 - 2021) would provide greater scaffolding of learning outcomes.

Several development groups 'road tested' these three options/approaches to scaffolding learning outcomes during 2023. Overall strand expectations were drafted but development group feedback was that this negatively impacted on the integration of the strands and the relevance of cross-cutting themes, which are a design feature of many NCCA specifications. These development groups expressed concern that adopting 'overall strand expectations' could contribute to the fragmentation of learning. Sample issues, examples or prompts were also considered but feedback from development groups was that these should not be included in specifications as they could quickly become dated and irrelevant and could restrict opportunities to explore issues relevant to a local or national context.

A clear preference emerged from these groups for the scaffolding of learning outcomes within specifications to take place by adding more detail to the 'students learn about' column in specifications, as applicable and suitable to the subject or module in question. During the course of their work, these development groups suggested that it would be helpful to identify cases where a specific learning outcome or group of learning outcomes may prove challenging and, in these cases, a one-page elaboration of the learning outcome(s) in question can be provided as a support for enactment of the specification. The scaffolding of learning outcomes needs to be approached carefully and with judicious application, as appropriate to nature of the subject, module or strand in question, and with a view to achieving clarity without over-elaboration, as research on learning outcomes (Priestley, NCCA, 2019) indicates that over-elaboration can have a range of detrimental effects on student learning. Feedback from these development groups indicated that, on-balance, it could be unhelpful to include more than one way of scaffolding learning outcomes within specifications, as it could reduce clarity and could lead to confusion or a spiral of specification.

Looking more broadly at supports for enactment across these jurisdictions, it is clear that supports provided in Ireland are broadly similar to those provided in Ontario and Queensland, though jurisdictions which have internal assessment components tend to provide more assessment materials to support teacher judgements about the quality of student learning. Ireland has a dedicated support service for teachers, Oide, a feature which does not appear to be in place in the other jurisdictions studied. Further and ongoing consultation with teachers will provide further insights into the most appropriate supports for a redeveloped senior cycle.

## **Chapter 4 research and teacher feedback on existing specifications**

This chapter explores research relating to the use of Learning Outcomes (Priestley, 2019) in curriculum specifications and reviews recent feedback from teachers on draft Leaving Certificate subject/module specifications. The following conclusions were drawn:

- Curriculum coherence in a broad sense is crucial in successful educational change. Alignment within all sections of curriculum specifications (horizontal coherence) needs to extend right across the education system to pedagogy, inspections, continuing professional development and initial teacher education (vertical coherence).
- Feedback from teachers suggests that clarity and coherence within the technical form of a specification is very important.
- Feedback gathered through consultation on draft specifications and early enactment suggests that several sections of a specification can contribute to clarity and coherence.
  - The **Rationale and Aims** can give clarity on the nature and importance of the subject.
  - The **Strands of study** section can help to set out how knowledge is classified in the specification; with a diagram capturing the interconnected nature of that knowledge.
  - A **multi-modal approach to assessment** can align well with the aims and rationale.
- Learning Outcomes can play an important role in achieving curricular coherence but they also present challenges, particularly in the initial years of a new specification, where uncertainty in relation to assessment can impact on teachers confidence and sense of self-efficacy.
- Adjusting to planning for teaching and learning using learning outcomes can be challenging.
- Scaffolding of learning outcomes, in a specification and/or in support materials, can enhance teachers learning and engagement with a new or revised curriculum specification and their confidence and sense of self-efficacy. Over-elaboration of learning outcomes can result in fragmentation, incoherence, de-professionalisation of teaching, less adaptation of learning to suit the needs of learners and arguably, less equitable outcomes for students. A balance must be struck between scaffolding on one hand and flexibility and choice on the other.
- Learning Outcomes in a redeveloped senior cycle should be scaffolded in a way that provides clarity about *what* learning to pursue; allows for curricular autonomy in *how* learning is to be pursued; and respects the professionalism of teachers to provide appropriate, relevant learning experiences for their students.

However, given the intense focus in Ireland on school leaving examinations and on what comes up in examinations, it is unlikely, irrespective of the level of scaffolding of learning outcomes provided in specifications and/or support materials, that tensions relating to assessment will be fully resolved by adopting a different approach to the technical form of curriculum specifications.

## Chapter 5 key competencies in a redeveloped senior cycle

This chapter outlines research on key competencies (McGuinness, 2023) approaches to curriculum and explores how key competencies in a redeveloped senior cycle can build on the existing key skills of junior and senior cycle. The term 'competencies' reflects Senior Cycle Review feedback of a desire to place a greater emphasis on the integration of knowledge, skills, and values/dispositions and is consistent with recent developments nationally and internationally. It should be noted however, that if students are to see and learn from the connections they make across subjects, this must be explicit in teaching and learning across not just within subjects and modules.

The development of key competencies can be advantageous to students in a range of ways. It can build robust learning which stays with students beyond the school context in which it was

acquired. It can help to make them more aware and prepare them for the complex challenges of the modern world and for an uncertain future, as well as giving them a voice and recognising their ability to participate meaningfully in society. It can help students to develop personal attributes other than intelligence which help them during and beyond school, as they transition to adult life.

However, there are also a number of challenges which arise when conceptualising and integrating key competencies into a curriculum. If students are to see and learn from connections across subjects, these interdisciplinary connections must be explicit in teaching and learning across subjects and modules, rather than confined to exclusive focus on how the competencies are developed in individual subjects, thus fragmenting student learning. Simply naming the competencies is inadequate. Teachers must be supported and given guidance in their understanding of the key competencies and their potential benefits to student learning, as well as seeing how they integrate within **and** span across subjects and modules.

In order to create a key competencies matrix for senior cycle, a range of comparative analyses were undertaken. Competencies matrices in 5 supranational educational agencies/organisations and across 8 international jurisdictions were analysed and compared. NCCA key themes/competencies/skills were analysed across 4 phases of education and a proposed key competencies matrix for a redeveloped senior cycle was created. Work was subsequently undertaken to utilise and adapt the proposed Key Competencies for Senior Cycle identified in McGuinness' research into a succinct list of competencies for use by development groups creating curriculum specifications. A key competencies document (NCCA, 2023), to replace the existing Senior Cycle Key Skills Framework (NCCA, 2009) has been published, for use by development groups, teachers, students and schools, as they enact a redeveloped senior cycle.

## Conclusions and template overview

Given limited research into the *technical form* of curriculum syllabi/specifications, rather than the more extensive research literature devoted to questions related to the content, ideologies and orientations of curriculum documentation (see chapter 1), it is understandable why curriculum agencies use a combination of precedent, existing syllabi/specifications, learning from other jurisdictions, and feedback from teachers when deciding what technical form their curriculum syllabus/specification documents should take. This paper explores each of these factors while situating them within a theoretical, historical and cultural context. There is some clear learning for NCCA from this paper which is set out below.

Given the complexities of the various different ideologies, orientations, models and traditions of curriculum and the multiple purposes of senior cycle identified in feedback received during the Senior Cycle Review (2017 – 2020), it is proposed that the technical form of NCCA's specifications for subjects and modules in a redeveloped senior cycle should reflect a hybrid approach to curriculum design and should facilitate development groups and teachers to combine them in a comprehensive and coherent way. This approach is more inclusive of a range of teacher and stakeholder beliefs about curriculum; offers various 'ways in' to a new or revised specification and builds on existing practice in curriculum development and enactment in Ireland. The technical form template must lend itself to this hybrid approach but beyond this, the work of achieving a careful balance between the different traditions/models/orientations and ideologies takes place

- in the iterative process of creating a specification in the template, to achieve clarity and coherence without over-elaboration for teachers and other users of curriculum documents.

- in appropriately supported processes of enactment in schools, classrooms and other sites of learning.

A review of syllabi/specifications from upper secondary education in a range of other jurisdictions (chapter 3) indicates that there is no single approach internationally to the technical form of curriculum specifications, While similar trends are evident, there is variation in the language and headings used and in the approaches taken. Common features include:

- an introduction and/or rationale.
- aims and/or objectives.
- key skills or core competencies
- recognition of diversity among learners.
- a section on teaching and learning, with some jurisdictions offering detailed advice on pedagogies and others offering a broad outline.
- strands of study.
- learning outcomes and scaffolding for learning outcomes, in a range of different forms.
- approaches to assessment.
- description of achievement standards.
- a glossary of key terms and definitions.

It is noteworthy that a greater level of scaffolding of strands of study and learning outcomes is evident in the curriculum syllabi/specifications of most other jurisdictions analysed in this paper compared to Ireland, particularly where either internal assessment or a combination of internal and external assessment exist. This scaffolding varies greatly from jurisdiction to jurisdiction and subject to subject. The aim appears to be achieving clarity without over-elaboration.

A very important aspect of the technical form of curriculum specifications is the issue of curricular coherence (chapter 4). Alignment between individual syllabi/specifications and the purpose, vision and guiding principles of a redeveloped senior cycle is very important. Internal alignment of all aspects of an individual syllabus/specification with each other is also crucial. Feedback from teachers indicates that they are broadly supportive of many aspects of how NCCA specifications are currently designed but that planning for teaching, learning and assessment with learning outcomes remains challenging and that more scaffolding of learning outcomes is needed. This scaffolding, for better or worse, has the potential to

- enhance teachers' learning and engagement, confidence and self-efficacy.
- provide reassurance to teachers concerned that their interpretation of a new curriculum specification isn't the same as their colleagues, and/or who may worry that their students may not be adequately prepared for their examinations or have the capacity to apply their learning to unfamiliar problems or contexts.
- reduce the likelihood that textbooks and examination papers become the de facto curriculum for the subject or module in question, though given their current impact on practice, they would likely remain significant.
- result in fragmentation of learning and incoherence.
- contribute to the de-professionalisation of teaching.
- result in less adaptation of learning to suit the needs of learners and arguably, less equitable outcomes for students.

Thus, it is important that a balance is struck between scaffolding on one hand and flexibility and choice on the other. The design of learning outcomes must be consistent with the overall

aspirations of the phase of education. For example, if the learning outcomes are extremely detailed and numerous such that they encourage box-ticking approaches to classroom-learning, they could negatively impact on the guiding principles of a redeveloped senior cycle, such as *Challenge, engagement and creativity* and *Wellbeing and relationships*. Achieving clarity, synthesis and adequate detail without over-elaboration is an ongoing challenge which will impact on curriculum development as development groups discuss, debate and decide what learning is of most importance in the subject or module in question and populate the template for the technical form of curriculum specifications in a redeveloped senior cycle. Given the intense focus in Ireland on school leaving examinations and on what comes up in examinations, it is unlikely, irrespective of the level of scaffolding of learning outcomes provided in specifications and/or support materials, that tensions relating to assessment will be fully resolved by adopting a different approach to the technical form of curriculum specifications and/or support materials.

The technical form of curriculum specifications should reflect the integrated development of knowledge, skills and values/dispositions. The proposed approach to key competencies in a redeveloped senior cycle outlined in chapter 5 takes into account competencies (Primary) and skills (Junior Cycle) across phases of education, including the existing key skills of senior cycle and wider societal challenges and developments. Senior cycle key competencies represent this more integrated approach, replace the existing key skills of senior cycle and the vision of the learner, and are incorporated into the template for subject and module specifications.

The draft template outlined below was used when developing specifications for subjects and modules in a redeveloped senior cycle. It may need to be amended or adapted as appropriate to different subjects/modules and to support the introduction of more diverse pathways through senior cycle. The most significant changes from the current template are the inclusion of:

- Updated text in relation to the purpose/vision of senior cycle.
- 'Related learning' is renamed and focuses on 'Continuity and Progression'.
- Key competencies replace the existing key skills of senior cycle and vision of the learner.
- The 'students learn about' column will offer more detail and scaffold learning outcomes
- Additional assessment component(s) accompanied by descriptors of quality for the AAC
- A visual overview for students and parents may be included in specifications or provided as a support.

Further feedback on the template may arise during public consultations on draft specifications and this will be considered when finalising redeveloped senior cycle specifications.

## Template section-by-section overview

Section	What it will contain
Senior cycle	This section is common to all specifications. It outlines the overarching purpose, vision and guiding principles of a redeveloped senior cycle, which emerges from the Senior Cycle Review Advisory Report (NCCA, 2021). This section contributes to curricular coherence and provides a touchstone for development groups as they create specifications.
Rationale	This section is specific to each specification. The rationale outlines (a). the nature of the relevant subject/module. (b). the subject/module's role and importance in realising the purpose/vision of senior cycle i.e. how it contributes to students' intellectual, social and personal development. (c). establishes the subjects' importance in a larger context.
Aims	This section is specific to each specification. It broadly and succinctly outline the over-arching purpose of the specification, including a number of concrete bulleted aims.
Continuity and progression	This section is specific to each specification. It succinctly outlines some of the ways the subject/module contributes to - curricular continuity from junior cycle and - progression from school to adult life and enriches future studies, work, careers, and participation in society.
Key competencies	This section introduces the key competencies of a redeveloped senior cycle. It includes a brief explanation and graphic of key competencies and provides a hyperlink to further key competencies material.  Each specification then outlines some ways these competencies can be developed in the subject/module in question.
Teaching and learning	This section succinctly outlines some of a wide range of approaches to teaching, learning and assessment that teachers may find helpful when enacting this specification, and emphasises the importance of inclusive teaching practices. Supports in relation to pedagogies will be provided as part of continuing professional development.
Strands of study and learning outcomes	<b>Introductory paragraph</b> This section is specific to each specification. Introductory text outlines the overall approach to and structure of the subject/module, naming the strands, providing an overview graphic and a sentence re: time allocation. Information in relation to the design of learning outcomes for higher and ordinary level, as appropriate, is included here. Strand, learning outcomes and 'students learn about' sentences common to all specifications are included here.

**Strand X: Title**

Strand outline should include a brief outline of the essence of the strand.

**Stand X learning outcomes table**

The section contains a table with two columns. The right-hand column contains learning outcomes which outline the knowledge, skills, values and dispositions students should be able to demonstrate after a period of learning. They must be broad enough to allow all learners to achieve but specific enough that they can, for the most part, be measured and assessed.

The left-hand column outlines specific areas that students must learn about. This column will provide more detail than is currently the case in recently published senior cycle curriculum specifications, scaffolding understanding of the learning outcomes without over-elaboration. Taken together, these provide clarity and coherence with the other sections of the specification.

Learning outcomes should be numbered/labelled to support planning.

**Assessment**

**Assessment**

This section begins with generic text about the purpose of assessment broadly in senior cycle.

**Assessment for certification**

It includes generic text re: assessment for certification, followed by a subject/module specific table presenting the assessment components and weightings for written examinations and additional assessment component(s).

**Additional assessment component: [insert name]**

A broad outline of the purpose and nature of the additional assessment component is included here. It may include a graphic, as appropriate.

**Descriptors of quality for additional assessment component(s)**

Brief text and a table outline a high, moderate and low level of achievement in the additional assessment component.

**Written examination**

Common text followed by subject/module-specific bullet points.

**Reasonable accommodations**

Common text re: RACE scheme included.



	<p><b>Leaving Certificate grading</b> Common text and table re: grading included.</p> <p>The assessment section of the template may need to be adapted for redeveloped senior cycle modules.</p>
<b>Appendices</b>	<p>Appendices may include additional information relating to the senior cycle key competencies that are embedded in the learning outcomes of each subject and module. The appendices may also include a visual overview of key concepts/features of student learning in the subject/module. The audience for this visual is students and parents and its purpose is to support conversations about student learning in the subject/module in question.</p> <p>Additional appendices are specific to each specification. They may include a glossary of action verbs, a glossary of terms and other relevant material. Further appendices may be included as applicable to individual subjects/modules. These appendices scaffold a shared understanding of the language, verbs and terms used in the learning outcomes and the specification more widely.</p>

## Introduction

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Writing critically about the field of curriculum in the 1960s, Hilda Taba expressed frustration that

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There is little discussion of the methodology of designing curricula and less clarity about the elements that may constitute a design (p2).

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Writing five decades later, Luke, Woods and Weir argue that

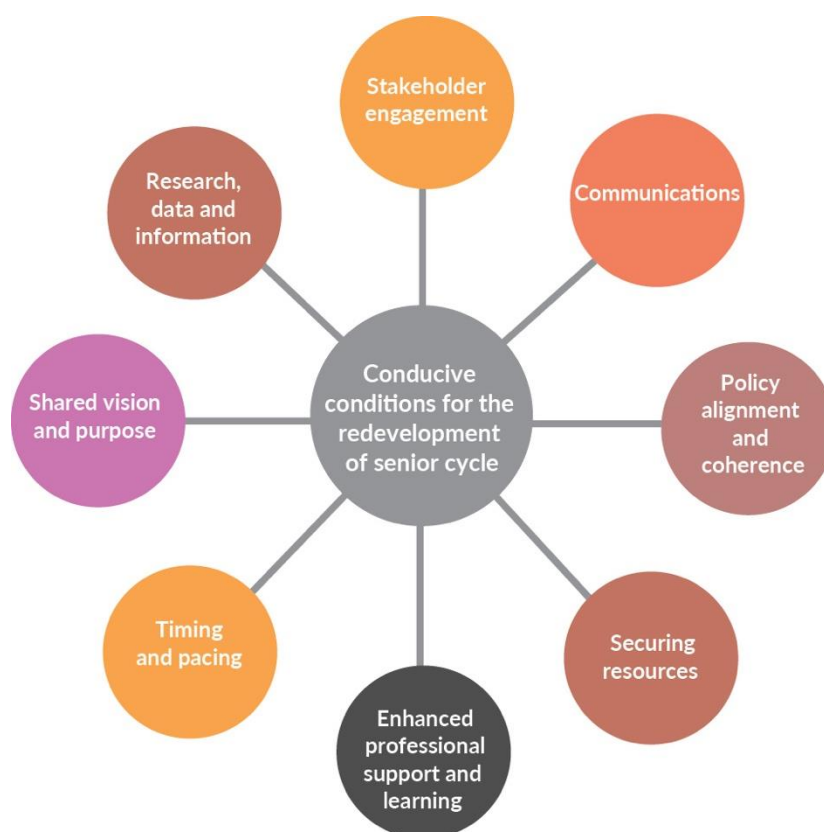
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Contemporary curriculum theory provides little theoretical or practical advice on the technical form of the curriculum, for the definition and specification of hierarchical and taxonomic categories, or descriptive categories. The core, unglamorous 'dirty work' of curriculum reform [is] the textual organisation and work of making official syllabus documents (p8, 2013).

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The purpose of this paper is to explore relevant research and practices nationally and internationally with a view to proposing an approach to the technical form of curriculum specifications and providing a template for use in the development of subjects and modules as part of Senior Cycle redevelopment. The target audiences for this paper, in the first instance, are the Board for Senior Cycle and Council. Its purpose is to advise and assist them in making decisions about the technical form of curriculum specifications in a redeveloped senior cycle. It will also inform development groups of the theoretical and practical basis for the template they will use as they review and redevelop subjects and modules. Lastly, it enhances transparency for researchers and others who may be interested in knowing more about why the template for the development of subjects and modules is the way it is.

It is important to note that the technical form template is a small part of a wider, complex process of curriculum redevelopment and change. The template, and the documents which are created using the template, must align with and support the overall aim of senior cycle redevelopment, which seeks to refocus senior cycle on the holistic development of each student, helping them to become more enriched, engaged and competent as learners. For this aim to be realised, a range of conducive conditions, outlined in the Senior Cycle Review Advisory Report (NCCA, 2022) and replicated in Figure 1 below, are vitally important to the overall process of senior cycle redevelopment. While this paper concerns itself with technicalities, it is vital to recognise that culture and teacher beliefs are of far greater significance than technicalities when considering the meaning of change and to what extent curriculum changes embed as teachers go about their work enacting the curriculum via interactions with their students. Changing curriculum documents alone is insufficient. Curriculum change must be aligned with system and school conditions; time for sense-making must be built into the process of change; curriculum development processes must learn from, support and enhance teacher professionalism; and teachers must be recognised as interpreters and mediators of the curriculum in their own right, as they approach a revised or redeveloped curriculum through the lens of their personal teacher beliefs and their professional experiences, including prior experiences of curriculum change.



**Figure 1:** Conducive conditions for the redevelopment of senior cycle

### What does the term ‘technical form’ of the curriculum mean?

Exploring this question, Stephen Petrina (2004) argues that, rather than concerned with what should be learned (the politics of knowledge, skills and values/dispositions), or with who should learn what (identity politics), the technical form of a curriculum is concerned with how it should be organised (the realpolitik of form), though clearly decisions about the format/technical form intersect with questions relating to the position of knowledge, skills, values and dispositions in a curriculum. In this paper, the term ‘technical form’ refers to how national curriculum specification documents for subjects and modules are organised. It includes the categories used and the layout of the documents, under specific headings. It also includes the approach taken within each section of these documents, as the heading alone does not provide insight into how each section is or should be approached and why a particular approach may be considered the most appropriate. Until comparatively recently, curriculum theory had little to say about the ‘technical form’ of a curriculum. As a result

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curriculum writers, policy makers, teachers and educators [have] little to call on as they make decisions about the shape and structure of curriculum documents and syllabi (p9, 2013, Luke, Woods and Weir)

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In this vacuum, decisions about how to organise and lay out curriculum documents were made

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based on precedent, previous syllabi or those of other jurisdictions [and on] the latest received wisdom about what kinds of formats teachers found useful  
(p10, 2013, Luke, Woods and Weir)

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This paper considers relatively recent academic analyses of the importance of the technical form of the curriculum (see chapters 1 and 4). It also considers precedent (see chapters 2 and 3), evidence from other jurisdictions (see chapter 3) and feedback from teachers (see chapter 4), as all are relevant in proposing the technical form curriculum specifications should take in a redeveloped senior cycle.

### Why is NCCA revisiting the technical form of curriculum specifications?

Feedback gathered during senior cycle review (2017 – 2020) and outlined in the Senior Cycle Review: Advisory Report (NCCA, 2022) identified a need to further consider and outline the range and form of appropriate materials (e.g. specifications, teacher guidelines, sample materials and exemplification) to be developed and provided by NCCA:

- to support schools, teachers and students who are working with curriculum components and
- to facilitate more flexible learning pathways through senior cycle.

Welcoming NCCA's Senior Cycle Review Advisory Report (NCCA, 2022), the Minister for Education Norma Foley committed that particular attention would be paid to the design of curriculum documents and the professional development required. This is to be informed by research, by learnings from experiences of curriculum change and through consultation with teachers to inform what is needed. The bedrock for redevelopment is the shared purpose, vision and guiding principles for senior cycle education which emerged from extensive consultation with schools and stakeholders during the process of Senior Cycle Review (2017 – 2020). This shared purpose is that the educational experience at senior cycle continues to educate the whole person; helps every student to become more enriched, engaged and competent; serves collective as well as individual purposes; and helps students to access diverse futures and participate in civic society and adult life.

An important next step in senior cycle redevelopment is to identify the technical form of curriculum specifications for subjects and modules. A curriculum specification template will be included at the end of this paper and used to develop specifications for the first tranche of subjects, namely:

- Ancient Greek
- Arabic
- Biology
- Business
- Chemistry
- Climate Action and Sustainable Development
- Drama, Film and Theatre Studies
- Latin
- Physics

Collaboration, consultation and direct engagement with teachers and students will continue to be fundamental to NCCA's process of developing specifications for subjects and modules as senior cycle is redeveloped. Adaptations to the template for curriculum specifications in a redeveloped senior cycle may be made on foot of feedback from teachers, students and stakeholders and to reflect diversifying pathways in senior cycle.

In addition to setting out the template for the technical form of curriculum specifications for subjects and modules, this paper begins to consider the range and form of appropriate materials to be provided by NCCA and/or other agencies, to support schools, teachers and students working with curriculum subjects and modules in a redeveloped senior cycle. Decisions about the range and form of materials to provide will be informed by close collaboration with and feedback from teachers.

An outline of the meaning of the terms *curriculum* and *curriculum development* as used in this paper are included below, with a view to providing clarity for readers of this document.

## What is curriculum?

In 1962, Taba defined a curriculum as a '*plan for learning*'. This definition is applicable to a wide range of contexts and situations but does not capture the richness of what the curriculum aims to achieve. More recently, A.V. Kelly argued that

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*Within a democratic society, an educational curriculum at all levels should be concerned to provide a liberating experience by focusing on such things as the promotion of freedom and independence of thought, of social and political empowerment, of respect for the freedom of others, of an acceptance of variety of opinion, and of enrichment of the life of every individual in that society regardless of class, race or creed (A.V. Kelly, 1977, 1st ed, 2009, 6th ed, p7)*

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For the purposes of this paper, a **curriculum** refers to the entirety of learning:

- outlined in curriculum frameworks, programmes, specifications and associated documents
- mediated and interpreted as part of professional learning,
- taught by teachers using a variety of pedagogies and
- experienced by students.

This broad definition of curriculum reflects evolving conceptions in Ireland of the term curriculum, from viewing it solely as a list of subjects and syllabi; to viewing it as encompassing programmes, subjects, syllabi and pedagogies; to viewing it as including all planned educational experiences; to viewing it as encompassing the entirety of experiences of schooling students have, including the hidden curriculum; the planned and received curriculum; and the formal and informal curriculum. Within a curriculum lie individual syllabi/specifications, which Luke, Weir and Woods define as

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*a map and a descriptive overview... a structured summary or outline of what should be taught and learned (Luke, Weir and Woods, 2013, p10)*

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## What is curriculum development?

**Curriculum development** refers to the process of deciding what students should learn. Curriculum development happens in various places, including classrooms, subject departments and schools; professional learning environments and institutions; national curriculum agencies; and international and supranational education-focused organisations.

In deciding what knowledge, skills and values/dispositions students should learn, curriculum developers, in consultation with stakeholders and researchers, review, discuss and ultimately select what is key to embed across the curriculum and within individual subjects and modules. Curriculum development also encompasses decision-making about the approaches to assessment which support students' learning as they develop their knowledge, skills and values/dispositions and consideration of different pathways and how they support transition to diverse futures.

If curriculum development is the planned process of selecting and organising what students should learn, taking into account the needs, abilities, aptitudes, and interests of the entire cohort of students a curriculum is designed for and reflecting/interrogating wider changes in society, **curriculum making** refers to the creative act of bringing a curriculum into being, whether at national policy level or in a classroom or other learning environment. Curriculum developers creating official curriculum policy documents need to be cognisant of retaining high expectations while avoiding curriculum expectations which exceed the time available for learning. Excessively content-heavy curricula can negatively impact on curriculum making i.e., on teachers' opportunities to respond creatively and constructively to their students' evolving needs, abilities, interests, aptitudes, and prior knowledge.

## What is curriculum coherence?

Curriculum coherence refers to the way a curriculum is organised and sequenced. This coherence is considered important at and across every level – at classroom, subject department, and school level, in professional learning contexts, and within and across national agencies. For the purposes of this paper, the focus is on curricular coherence at national policy level, whether that's within a Framework document, within a programme and/or within individual specifications for subjects and modules.

There are two types of curricular coherence (Schmidt and Prawat, 2006), vertical and horizontal. Vertical coherence at national policy level refers to alignment across different parts of an education system, such as initial teacher education, continuing professional development, inspections, assessment, and examinations. (Note that vertical coherence from a teaching perspective means that student learning is structured purposefully and logically sequenced, within and across phases of education). Horizontal coherence at national policy level refers to alignment between an over-arching Framework document, a programme statement (where relevant) and individual syllabi/specifications for subjects and modules. It also refers to the internal alignment of all aspects of an individual syllabus/specification to support teachers who are using the document to inform their teaching. Lack of coherence damages student learning and weakens teachers' engagement with and buy-in to curriculum changes.

## How is this paper structured?

This paper is structured as a series of interconnected chapters. The structure of the chapters responds to the observation by Luke, Weir and Woods (p9, 2013), that curriculum bodies make decisions about the technical form of their documents based on

- research on the *technical form* of curriculum syllabi/specifications (chapters 1 and 4)
- precedent, existing practice and previous syllabi (chapters 2 and 3)
- analysis of practice in other jurisdictions (chapter 3)
- teacher feedback on the formats they find useful (chapters 4 and 5).

Chapter 1 considers curriculum theories and their relevance to the technical form of specifications. Chapter 2 outlines a brief history of curriculum design at senior cycle in Ireland, providing context on the evolution of the state's approach towards the technical form of syllabi/specifications. Chapter 3 looks at the technical form of syllabi/specifications in a range of international jurisdictions to facilitate policy learning and to situate Ireland's current approach within a wider international context. Chapter 4 explores the theme of curricular coherence with a particular focus on learning outcomes and alignment in curriculum design. It also outlines the main feedback received from recent public consultations on senior cycle curriculum specifications. Chapter 5 responds to senior cycle review feedback on the importance of the *integrated* development of knowledge, skills, values and dispositions, exploring how key competencies might be integrated into curriculum specifications in a redeveloped senior cycle. Chapter 6 builds on previous chapters to offer conclusions and propose a template for the technical form of specifications for both subjects and modules in a redeveloped senior cycle. As indicated above, this template may be subject to changes arising from feedback to NCCA on opportunities and challenges arising from the first phase of senior cycle redevelopment and as the Board for Senior Cycle and Council deliberate next steps.

# 1. Curriculum theory and the technical form of curriculum specifications for subjects and modules

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Achieving a shared understanding of the meaning of curriculum is challenging, due to the multiple meanings it holds for teachers, researchers, policymakers, and stakeholders, including students and parents. It is also difficult because the meaning of curriculum has changed and evolved over time and continues to do so. For these reasons, this chapter seeks to achieve a more modest aim, namely, to summarise some of these changes over time and to set out a range of understandings of the meaning of curriculum. This chapter seeks to establish a research basis and context for identifying what the technical form of curriculum specifications for subjects and modules should be in a redeveloped senior cycle.

## 1.1 Curriculum Theory

The philosophy of education has a rich tradition reaching back to antiquity. It explores wide-ranging questions relating to the purpose of education such as who education is for; how learning happens; what knowledge, skills and dispositions are of most value; and how education is enacted for individuals and the wider society. These philosophical questions were widely discussed and debated during NCCA's senior cycle review and contributed to the articulation of a clear purpose, vision and guiding principles for a redeveloped senior cycle, which are outlined in the Senior Cycle Review Advisory Report (NCCA, 2022). The field of curriculum studies is, comparatively, a much more recent academic specialism. It overlaps with but is distinct from the philosophy, sociology, and psychology of education. It allows for a holistic analysis of education because it is interdisciplinary by nature and is not a sub-set of an existing discipline.

### Pre-1920s

Pre-1920s, in Ireland and internationally, the curriculum was viewed simply as a series of official government documents, sometimes including mandatory textbooks, to be implemented by teachers in schools. These documents focused primarily, and often exclusively, on brief outlines of content teachers should teach and students should learn. Whilst more complex understandings of curriculum making and development now exist, it is important to acknowledge that for many people, the word curriculum still evokes official government published curriculum documents. It is also important to acknowledge that official curriculum documents have an influence on school systems, schools, teachers, and students' experiences of education.

### John Franklin Bobbit and the needs of society

As the field of behavioural psychology grew in prominence, and as societal preoccupation with scientism (extending scientific approaches to all branches of human knowledge and experience) continued to expand its influence, this simple view of curriculum began to change. John Franklin Bobbitt, a leading figure in the emerging field of curriculum studies, argued that curriculum makers should concern themselves with documenting the daily lives of citizens, so that curriculum objectives could be developed to be in tune with the needs of society, with a view to producing citizens who would meaningfully contribute to society. This idea, of the curriculum as intrinsically linked to and reflective of society, and the needs of society, remains a core feature of curriculum development to this day. What is often contested, however, is the extent to which various aspects of society – civic and civil life, including culture, the environment, and the economy –



should inform curriculum development processes and be incorporated into the documents emerging from curriculum developments.

### **Ralph Tyler and local curriculum-making**

Ralph Tyler, a student of Bobbitt, went further than Bobbitt when he published *Basic Principles of Curriculum and Instruction* in 1949. In it, he argued that questions relating to the purpose of education should be decided at local level. The four questions he suggested schools (and specifically school leaders) should ask themselves to decide on their curriculum became known as the 'Tyler Rationale' and were:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organised?
4. How can we determine whether these purposes are being attained?

According to Tyler, once school leaders have decided what needs, interests and goals their schools will serve, the whole school community should work together to identify the experiences which should be provided to students to achieve those goals. He recommended that they evaluate the effectiveness of these experiences afterwards in terms of whether or not they achieved their desired impact. Like Bobbitt, he believed that the curriculum should respond to societal needs and help people by providing solutions to some of the challenges they faced, but Tyler saw this as happening at the level of local communities rather than as a whole of society endeavour. The extent to which the curriculum is – or should be – decided at national, regional, or local level continues to be much contested by policymakers, teachers, school leaders, and academics. At times, both the content of the curriculum and the degree of control exerted over schools via prescription of the curriculum are also subject to political influences and interventions. Early curriculum theorists were also curriculum designers and explored both the abstract thinking/research about and the concrete realities of curriculum design. Over time the two diverged and separated, but in recent decades holistic thinking about research, policy and practice have converged again.

### **Hilda Taba and a complex theory of curriculum**

The field diversified and expanded significantly from mid-century onwards, though not in any coherent or systematic way. In the sixties, Hilda Taba, in *Curriculum Development: Theory and Practice* (Taba, 1962), attempted to impose some order on what she viewed as a frustrating fragmentation in ways of thinking about the curriculum, which in her view, was not helpful to practitioners. In her book, she called for a complex theory of curriculum, which didn't fall into simplistic narratives where the basis for the curriculum was one single thing, such as subject content, the needs of the learner or the needs of society, but rather found a way to combine them in a comprehensive and coherent way. This, ultimately, reflects the approach to curriculum development taken in Ireland for many years and is explored in more detail in chapter 2.

### **Lawrence Stenhouse and the role of teachers in curriculum-making**

The role of teachers in the implementation or enactment of a curriculum also began to receive more attention, with scholars such as Lawrence Stenhouse calling on teachers to see their work as both an art and a science and emphasising the need for high quality teacher education and continuous professional learning. The interdependent relationship between many factors, as

teachers make daily decisions to enact the curriculum in their classrooms, has received much attention in the intervening years. Some of these factors include:

- teachers' personal and professional knowledge, skills, values, dispositions, and beliefs.
- the environment(s) they work in and who they work with e.g. students, school leaders etc.
- the degree of manoeuvre available in light of the (curriculum) policies they are enacting.
- the professional learning and support provided as teachers make sense of curriculum changes.
- the systems they work within, including accountability structures and testing mechanisms.

### **Joseph Schwab and curriculum as a social process**

A significant transformation in the curriculum field can be traced to Joseph Schwab's article entitled *The Practical: A Language for Curriculum* (Schwab, 1969) which argued that new problems in the field of curriculum had emerged (such as the phenomena of student protest) which needed new responses and ways of thinking. Unlike Tyler, Taba and Stenhouse, who were behavioural scientists, Schwab was a philosopher of science. He saw curriculum making as a social process of deliberation and judgement which must lead to action and serve the public good. He identified 5 factors (or 'commonplaces') which must be considered in all curriculum deliberations, namely: teachers, learners, subject-matter, milieu (or environment) and curriculum making. Schwab's idea of curriculum-making as a complex, social process has endured to this day, through further waves of theorisation in the field of curriculum studies.

### **Pinar and the biographical journey of the learner**

The next generation of curriculum scholars responded to Schwab's call for new ways of thinking about curriculum. However, they did not focus primarily on deliberation, as Schwab might have wished, but instead searched for a better theorisation of curriculum. One such theorisation by William F. Pinar, based on the concept of 'currere', emphasised the biographical journey of the learner (Pinar, 1975). He emphasised the importance of learner self-reflection on the past, present and future, to better identify what one needs and how education can contribute to this journey of becoming across the lifespan. This emphasis on the needs of learners and on the role of self-reflection in learning is evident in both the processes and products of curriculum development in Ireland and in many other jurisdictions internationally. Student voice is also increasingly sought and incorporated into curriculum-development processes. Curriculum frameworks and specifications consider who the student becomes as a result of their life experiences, including in education and emphasise the development of student competencies. These facets of curriculum development are themselves subject to critique. See, for example, *Capacities and the Curriculum* by Gert Biesta and Mark Priestley (2013). In addition, the guiding principles of curriculum frameworks often emphasise the importance of developing positive dispositions towards lifelong learning across the lifespan.

### **Benson R. Snyder and the hidden curriculum**

In the 1960s and 70s, the idea of the 'hidden curriculum', a term coined by Philip W. Jackson in 1968, also began to receive more attention. Benson R. Snyder (1973) built on Jackson's work and explored how the hidden norms, assumptions and expectations of institutions and society influence how students engage with – or turn away from – education. Snyder emphasised the myriad ways in which students miss opportunities to develop independently and think creatively and expressed particular concern about the difficulties the hidden curriculum creates for minority

students. Concerns about the hidden curriculum, about its impact on minority groups and about diversity and inclusion continue to feature prominently in curriculum research and attempts to mitigate their influence regularly come to the fore, for example, during Black Lives Matter protests, and during school closures as a result of the Covid19 pandemic.

Responding in many ways to concerns emerging from research into the hidden curriculum, a greater emphasis on creativity, on independent (and/or innovative) thinking and on diversity and inclusion are a core feature of many curriculum frameworks, nationally and internationally and of wider education initiatives, such as the Arts in Education Charter and portal (2012); the Creative Ireland Programme (2017 – 2022); and the DEIS Action Plan for Educational Inclusion (2005), which has recently expanded to include more schools. Recognition of the intersection between creativity, wellbeing, diversity and inclusion also frequently feature in curriculum frameworks and in initiatives which encompass and extend beyond formal schooling, in the areas of healthcare and social care, for example. However, there is often little agreement about the ways in which principles such as creativity and wellbeing should be integrated into the curriculum.

### **A.V. Kelly, curriculum and ideologies**

While some curriculum theorists argue that the only logical conclusion in the face of such complexity is to take a combined approach towards designing curricula, not everyone agrees. A.V Kelly, in his book *The Curriculum: Theory and Practice* (1977, 1st ed, 2009, 6th ed.) identified ‘three major ideologies’ evident in approaches to curriculum development and planning: curriculum as content and education as transmission; curriculum as product and education as instrumental; and curriculum as process and education as development. Kelly argues that each has its own implications and consequences, but it is only the third of these which

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seeks to offer a form of curriculum which is essential for any society claiming to be genuinely democratic” (ibid, p91),

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provided it rests upon

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a properly rigorous and substantiated base [rather than] a romantic reverence for childhood (ibid, p92).

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For Kelly, a truly educational curriculum emphasises and is steered by its guiding principles and the processes of human development, not primarily by quantities of knowledge absorbed or changes in behavioural performance.

### **Cultural, social and symbolic capital: Pierre Bourdieu and E.D. Hirsh**

The work of Pierre Bourdieu, a sociologist, had a very significant impact on curriculum theory. In his writings (Bourdieu, 1984) he proposed that there are many types of capital, including financial/economic capital, cultural capital (competencies and qualifications), social capital (including traditional social networks) and symbolic capital (including reputation and respect). These forms of capital, he argued, operate in a more sophisticated way than social class alone and impact the dynamics of power in societies. Bourdieu believed that the ruling and intellectual classes use a combination of all forms of capital to preserve their position, power and privileges across generations, particularly in and through education. Judgements of cultural/aesthetic taste (for example, in art, music, hobbies, food, clothing, furniture etc.), Bourdieu argued, are acts of

social positioning. He proposed that children internalise aesthetic tastes consistent with their social origins at a young age and quickly develop an aversion to behaviours and tastes which differ to their own. Bourdieu considered tastes which originate largely within the family (food, clothing, furniture), rather than those which can be impacted by education (art, music, hobbies) to be the most revealing and deep-rooted. Relationships built up over time (social capital) can also offer advantages, including educational advantages. Investing in relationships and in tastes consistent with the ruling classes can increase status and respect. Capital which is less concrete and visible (symbolic capital) one generally gains via reputation and respect.

When a person with a good reputation and respect uses this against a person of lesser power/ social standing, to get them to change their behaviours, this is an act of symbolic violence. Symbolic violence can extend to education, when certain ways of thinking and perceiving the world are imposed through education. When educational success relies on behaviours such as clothing, hairstyles, dialect, accent etc, these are acts of symbolic violence. Bourdieu rejected the idea that education can simply provide equality of opportunities and thus contribute to social mobility. He argued that social, cultural and symbolic capital are replicated in the very structures of education. The knowledge, skills, values and dispositions of the middle and upper classes and the cultural experiences they have access to are most valued in education and in society and this helps to explain how their power and influence is replicated via education. The pedagogies, language and norms of the classroom can also be acts of symbolic violence against particular social groups and minorities. All of this helps to explain variation in academic achievement in children from different social backgrounds, particularly where cultural capital is conflated with intelligence. Bourdieu saw this as largely happening at an unconscious level, rather than necessarily being a deliberate act of symbolic violence.

ED Hirsh is an American academic who conceptualised cultural capital in education in a different way. Rather than critique the idea that one social class or grouping should dictate the cultural knowledge of most worth (as Bourdieu had done), he published a book, in 1987, called *Cultural Literacy*, which listed over 5,000 concepts, phrases, names and dates every American should know in order to be culturally literate. His non-profit foundation publishes and regularly updates a particularly detailed set of curriculum guidelines for use in classrooms. Hirsh's ideas were and continue to be highly controversial. Considered in light of Bourdieu's theories, use of this list in education could be seen as an act of symbolic violence, as it represents Hirsh using his reputation and respect (as an academic) to impose his view of what it means to be educated (his lists of curriculum content) on cohorts of children, irrespective of their background, aesthetic tastes and aspirations. Advocates of Hirsh's approaches believe that his approach levels the playing field by helping students from lower social classes to compete with their peers in a world which is set up to place little value on their ways of being in the world. Essentially, Hirsh took Bourdieu's idea that *investing in relationships and in tastes consistent with the ruling classes can increase status and respect* and suggested that, if this is the case, instead of fighting it, why not use that to the advantage of all children? Bourdieu and Hirsh's very different ideas about the meaning and implications of social, cultural and symbolic capital are relevant to the technical form of curriculum specifications, particularly when considering the curriculum ideologies/orientations/models at work in curriculum documents and when considering how knowledge is framed and elaborated in them.

## Teacher-proof curricula

During the 1960s and 1970s, in contrast to increasingly complex theories of curriculum being put forth by academics, many governments and policymakers were developing so-called 'teacher-proof' curricula. Teachers in many countries (though not in Ireland) were given highly technical and prescriptive curriculum documents to 'deliver' to their students. Clear and firm connections were established between objectives, content and assessment, to contribute to vertical curriculum coherence, but also in an attempt to make it much less likely that teachers would 'misinterpret' the intentions of new or revised curriculum syllabi. The paramount objective of curriculum reforms appeared to be to ensure that teachers faithfully implemented the official government curriculum. Such curricula were critiqued because they left little scope for teachers' professional judgement, creativity and expertise. In addition, research soon established that it was impossible to achieve a singular 'faithful' curricular experience, either in planning or in classroom enactment. Whether policymakers acknowledged it or not, the reality is that curriculum enactment involves

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...highly dynamic processes of interpretation, mediation, negotiation, and translation. (Priestley, Philippou, Alvunger, Soini, 2021, p1)

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This reality must be recognised by those creating curriculum documents; by those designing CPD; by schools and teachers in their curricular planning; and by teachers and students navigating and making the curriculum in real-time classroom interactions, using a variety of pedagogies.

The degree to which curriculum documents offer clarity and detail about the knowledge, skills, and values/dispositions teachers should help students to develop and the degree of specificity official curriculum documents should provide, particularly in relation to 'content' knowledge (rather than other types of knowledge) and assessment, remain some of the most contested aspects of curriculum development. These issues are explored in more detail in chapters three and four.

## John Goodlad and curriculum levels

In the meantime, conceptualisations of curriculum continued to evolve throughout the 70s, 80s and 90s. The idea of curriculum levels was articulated by John Goodlad, who identified 4 levels at which a curriculum takes place: at a societal level, at an institutional level, at an instructional level, and at a personal level. Although he emphasised communication and negotiation between and across levels, his work came to be associated with and at times, criticised, for being too hierarchical. Nonetheless, discussions of curriculum still often – understandably – reference 'top down' and 'bottom up' approaches to curriculum development and curriculum design. Thinking of a curriculum in terms of the various levels at which it takes place can be helpful, provided no single level is privileged above all others and collaboration across levels is valued and recognised.

## Walter Doyle, Zongyi Deng and the intersectionality of curriculum and pedagogies

Further conceptualisations of how an 'official' or institutional curriculum intersects with the experience of a curriculum in classroom interactions emphasised that curriculum making is a non-linear iterative process of planning, teaching, learning and reflection, refined by teachers in a cyclical process of making and remaking a curriculum during classroom interactions and via the tasks they set for their students. Academics such as Doyle and Deng emphasised that a curriculum cannot exist without pedagogy: that whilst it may be specified in theoretical

documents (to a greater or lesser extent, depending on the jurisdiction and/or phase of education), it is only brought to life in the classrooms where it is experienced. The capacities and life experiences students bring with them into their classrooms also came to be seen as important factors in the process of classroom curriculum making, as students engage with different educational experiences, tasks and content whose original source is likely an official curriculum, but which students experience as mediated, interpreted and designed by their teachers. These conceptualisations fundamentally challenge straightforward ideas about curriculum as no more than a series of official government documents to be implemented by teachers in schools. They also illustrate that it is possible to explore curriculum making from different vantage points, including from student, teacher, classroom, school, region, professional support service, research, policymaking and/or political perspectives.

### **Annette Thijs, Jan Van Den Akker and curriculum levels, products and components**

John Goodlad's concept of a curriculum as something that is experienced at different levels was expanded upon by Thijs and Van Den Akker (2009), who identified what they described as a 'supra' level of influence on curriculum development. This 'supra' level recognises the increasing influence of international agencies and actors, such as UNESCO, the EU, the OECD, and the World Bank. It also encompasses enhanced opportunities for researchers, policymakers, and educators to have transnational conversations and opportunities for policy learning (or borrowing), which now play a significant role in curriculum (policy) development. Thijs and Van Den Akker's 4 levels (which Goodlad framed as societal, institutional, instructional, and personal) were labelled the Macro (system, national level); Meso (Schools and Institutions); Micro (Classroom, Teacher) and Nano (Student, individual) levels.

Level	Description	Examples
SUPRA	International	<ul style="list-style-type: none"> <li>• Common European Framework of References for Languages</li> </ul>
MACRO	System, national	<ul style="list-style-type: none"> <li>• Core objectives, attainment levels</li> <li>• Examination programmes</li> </ul>
MESO	School, institute	<ul style="list-style-type: none"> <li>• School programme</li> <li>• Educational programme</li> </ul>
MICRO	Classroom, teacher	<ul style="list-style-type: none"> <li>• Teaching plan, instructional materials</li> <li>• Module, course</li> <li>• Textbooks</li> </ul>
NANO	Pupil, individual	<ul style="list-style-type: none"> <li>• Personal plan for learning</li> <li>• Individual course of learning</li> </ul>

**Table 5:** Curriculum levels and products, from Thijs and Van Den Akker (2009)

Their work also made a distinction between the different forms of a curriculum, namely an intended curriculum (the vision and intentions laid out in official documents); an implemented/enacted curriculum (how the vision and intentions are interpreted, planned for and taught by teachers via classroom interactions, tasks and activities) and an experienced/attained curriculum (what is perceived, experienced and learnt by students).

Ten core components of the curriculum<sup>1</sup> were identified by Thijs and Van den Akker, as described in table 2 below.

COMPONENT	CORE QUESTION
Rationale	Why are they learning?
Aims and objectives	Towards which goals are they learning?
Content	What are they learning?
Learning activities	How are they learning?
Teacher role	How is the teacher facilitating their learning?
Materials and resources	With what are they learning?
Grouping	With whom are they learning?
Location	Where are they learning?
Time	When are they learning?
Assessment	How is their learning assessed?

**Table 6:** Curriculum components in question form, from Thijs and Van den Akker (2009)

Van den Akker (2003) had earlier visualised these components as a delicate spider's web, where the weakening of any thread impacts on the stability of all others. Thijs & Van den Akker also noted that, depending on what levels of curriculum making and development you are operating at, some components may matter more than others. For example, generally speaking, *Grouping and Location* matter more in schools and classrooms (micro and nano levels) while *Rationale* and *Aims and objectives* are foremost in the minds of those operating at a supra and macro level. In considering how to develop a template for curriculum specification development to be used in a redeveloped senior cycle, it is important to clarify which of these components fall entirely or partially outside the sphere of influence of curriculum specification design (macro level), specifically, *materials and resources*, *grouping*, *location* and to a lesser extent, *time*, *learning activities* and *teacher role*, though most specifications will have something to say about the pedagogies used to achieve the aims and objectives of the curriculum specification in question. This is not to suggest that they don't matter, but rather that they fall under the umbrella of conducive conditions for curricular change (see p2) as outlined in NCCA's Senior Cycle Review Advisory Report (NCCA, 2022).

Taking into account the curriculum components most relevant to curriculum policymakers, Chapter 3 offers a comparative analysis of core components of curriculum specifications in Ireland and across a range of other jurisdictions, with a view to considering what format the technical form and template for curriculum specification design in a redeveloped senior cycle should take.

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<sup>1</sup> NCCA uses the term 'curriculum components' to refer to subjects, modules and areas of learning.

### **Mark Priestley et al and curriculum sites of activity**

Mark Priestley, Daniel Alvunger, Stavroula Philippou and Tiina Soini's book *Curriculum Making in Europe: Policy and Practice Within and Across Diverse Contexts* (2021) builds on and further nuances Thijs and Van den Akker's levels, with the idea of 'sites of activity' where curriculum-making takes place, to more fully capture the social practices which constitute curriculum decision-making; the different forms of curriculum which exist in different settings; and the 'actors' (groups and individuals) who undertake curriculum making for different purposes, in different settings. Priestley et al argue that the type of activity determines whether it is supra, macro, meso, micro or nano, rather than the people or actors engaging in curriculum making activities, as those making a curriculum often move between these different sites, depending on the type of curriculum making they are engaged in. The meso level, potentially including CPD agencies, teacher subject organisations and even textbook providers, is considered vital in providing opportunities for 'mediation, translation and interpretation' from policy to practice. These sites of activity are presented in a 'context neutral' way, such that no singular site of activity (generally official government curriculum policy making and documentation) is viewed as the correct or most important site where curriculum making takes place. Of particular interest when analysing sites of activity are the ways in which flows of ideas, discourse, and influence move across and between different sites and actors, as they make and remake the curriculum.

The context neutral approach they propose is arguably more democratic and less judgemental of the various actors within education systems who engage in curriculum making and development and can highlight differences and challenges encountered without the primary objective being to critique, though such critiques can and do undoubtedly emerge and are often helpful. However, the context neutral approach becomes less useful if those using this approach ignore the power dynamics at play within and across the different levels as a curriculum is developed and enacted.

### **William A. Reid and curriculum traditions**

Ultimately, it would be a mistake to present curriculum theory as a linear process of progress towards a shared understanding. Multiple curriculum theories co-exist and/or are in dialogue with each other at any given time. In *The Pursuit of Curriculum: Schooling and the Public Interest* (Reid, 2006), Reid identifies 4 curriculum traditions. The systematic tradition seeks to find an approach to curriculum making which works in all contexts and with all subjects. The existentialist tradition focuses on the experiences, imagination and autobiography of learners and sees institutions as of lesser importance. The *radical tradition* is critical of all curricula and rejects the institutions of curriculum and schooling entirely. Finally, a fourth tradition, the *deliberative tradition*, recognises that the other traditions all have something to offer – be it a systematic approach, a learner-centred approach or a critique of curriculum as a concept and a practical reality – but fundamentally sees the purpose of curriculum-making as deliberation. NCCA's curriculum development process is grounded in this deliberative tradition.

### **Societal changes and their impact on curricula**

Curriculum theory, curriculum development and curriculum making are continually in dialogue with wider societal changes, though the speed at which these changes are reflected in a curriculum is often slow. Mary Newbury Adams, for example, was a prominent feminist and suffragette in late 19th century America, who believed that women should have equal access to education, and that education was even more important than the right to vote, as poorly educated women could too easily be controlled, particularly by the clergy. She wrote and spoke extensively



on educational topics including the importance of early years (kindergarten) education and developing human potential. One way to empower women, she believed, was to ensure they knew the history of the contribution of the women who came before them.

The implications of successive waves of feminism and feminist theories to shaping a curriculum are clear. It requires a reconsideration of whose voices, actions, and beliefs have shaped history, and an understanding of the ways in which women's contributions to history and society have been minimised, lost, side-lined, or ignored for millennia. Critically reconsidering whose (his)story is told via and within a curriculum is a vitally important consideration for curriculum developers and curriculum makers.

**Critical race theory (CRT)** presents a similar challenge to traditional views of what matters when it comes to shaping a curriculum. Critical race theory (a term coined by Kimberlé Williams Crenshaw) involves thinking critically about social concepts of race and ethnicity. It is cross-disciplinary by nature and looks at how race, class, gender and (dis)ability intersect and impact on identity and (in)equality, often in complex ways. Critical race theory proponents believe that race is a social/cultural concept rather than an idea with any scientific or biological basis. Critics of critical race theory argue that it rejects reason and merit, and/or that it silences white people and indoctrinates children when it is taught in schools. Proponents say that those who reject Critical Race Theory are trying to silence discussions of racism, equality, social justice, and the history of race. Critical race theory presents a significant challenge for curriculum developers and curriculum makers. Rather than simply calling for previously silenced voices to be reinstated or included for the first time in the curriculum (for example, women in the case of feminism, or diverse racial groups when reconsidering the intersections between racism and the curriculum), CRT challenges the bedrock upon which such efforts at inclusivity are built, namely the very idea that different racial groups exist, other than as a social construct. In this context, diversification of curricula can be considered a more appropriate response than proceeding from a base which accepts race, class, ability and gender 'norms'.

Societal changes impacting on curriculum development extend beyond questions relating to identity. In the Senior Cycle Review Advisory Report (NCCA, 2022), a range of societal changes impacting on curriculum development and curriculum making are summarised as including technological advances, the spread of misinformation, public health challenges including a recent global pandemic, globalisation, climate change, increased migration and multiculturalism, changing family structures, social inequities and social movements. The ongoing war in Europe recently resulted in a very significant, ongoing increase in migration to Ireland and consequent adaptations to curriculum planning to include the provision of education for children displaced from Ukraine. It also resulted in a cost-of-living crisis which continues to impact on the most vulnerable in our society and which has increased the number of children living in poverty in Ireland.

### **Curriculum cultures**

A curriculum does not simply adapt to and reflect societal changes, it is also a mirror of the society in which it exists. For this reason, curriculum theorists often refer to and discuss the predominant 'curriculum culture' at work in individual countries or jurisdictions.

The complexity of a curriculum both mirroring society and responding to societal changes can lead to tensions between what is and what could be. If a curriculum is attempting to respond to wider societal changes while the schools and institutions in which the curriculum is being made

are more motivated to align with the status quo, a lack of support for curriculum change and/or actual curriculum change may emerge. Equally, a demand for curriculum change may come from curriculum makers (i.e. teachers) and/or from the wider society (e.g. the recent cross-sectoral review of relationships and sexuality education) and then be taken up by curriculum developers at local, regional and national levels. Building on earlier work by Westbury (2000), Stanley (2011) and others on curriculum cultures, in *Evolution of Irish curriculum culture: understandings, policy, reform and change* (Gleeson, 2021), Jim Gleeson argues that there are two distinct curriculum cultures at work in Ireland, the interplay of which has led to the development of a hybrid curriculum culture. Gleeson's summary of these curriculum cultures is paraphrased below.

**Anglo-Saxon/American curriculum culture** focuses on subjects and pre-determined ends to education, via skills-based education and detailed learning outcomes. It sees the purpose of education in practical terms, as being primarily about the development of human capital, to meet the needs of the economy and the need of individuals to make a living. Knowledge is viewed as largely value-free. 'The' curriculum is the same irrespective of the students experiencing it and is neatly packaged for 'delivery' to students. The focus of the curriculum tends to be on what content should change, rather than on the pedagogies most consistent with achieving the aims of the specification in question. The outcomes of such an education are predictable and can generally be assessed via standardised testing, though assessing certain key skills (such as collaboration) presents some challenges. The reasons Anglo-Saxon/American curriculum culture remains influential in Ireland are complex and include geography (as our closest neighbours), history (due to the impacts of centuries of British rule) and the economy/trade (as our most significant trading partners and investors).

Proponents of Anglo-Saxon/American curriculum culture view it positively because they believe that detailed so-called teacher-proof curricula (see p12) reduce the possibility that students are advantaged or disadvantaged by differences between individual teachers and between different schools. They also view the focus on disciplinary knowledge positively, as this provides students from all different backgrounds with the same 'cultural capital' (see chapter 1) as their generally more well-off peers, who often have access to such cultural capital largely due to their parents' levels of education and ability to fund educationally enriching experiences outside of formal schooling. This culture also makes accountability within the teaching profession possible, as what should happen as a result of educational experiences is viewed as largely predictable.

Critics of Anglo-Saxon/American curriculum culture view it as narrow and overly instrumental, too focused on qualifications rather than the more 'human' purposes of education, such as socialisation, personal development, and learning to respond to situations where there is no predefined 'best' response or outcome. Those who are most critical of this curriculum culture, such as Stanley (2011), argue that its 'value-free' conception of knowledge 'helps perpetuate a dysfunctional and anti-democratic social order' which discourages curiosity, questioning and individual viewpoints on what it is that students are learning.

**Didaktik** curriculum culture, which is related to the German 'bildung' tradition of personal and cultural maturation, is primarily focused on student self-formation and human wellbeing. In this culture, 'a' curriculum is one out of many possible approaches. 'Knowledge' is never value-free and the primary purpose of education is to assist students to figure out who they are and what they want from their lives, rather than focusing exclusively or primarily on achieving qualifications. A curriculum cannot be precisely pre-defined, but must be adapted to the needs,

abilities, interests aptitudes and prior knowledge of students during the curriculum-making process via teacher-student and student-student interactions. In this tradition, teaching and learning are autonomous activities (teaching can happen without input from students; and learning can happen without input from teachers) and the child is viewed as a natural learner. Subject matter is not viewed through the lens of pre-defined cultural capital to be passed from one generation to the next but is viewed rather as a tool or context for developing students' individuality. The reasons didaktik curriculum culture is influential in Ireland are also complex and include geography (our closeness to mainland Europe), history (our desire to distance ourselves from our colonial past and emphasise both our national and our European identity), and arguably our national character, which values rest and play at least as much as work, and which values education for its own sake rather than exclusively as a means to an end, as was evident in the Senior Cycle Review Advisory Report (NCCA, 2022).

Proponents of didaktik curriculum culture view it positively because they believe that teachers are professionals who are best placed to adapt a broadly specified curriculum framework and/or subject syllabi/specifications to meet the needs, abilities, interests, aptitudes, and prior knowledge of their students. They generally view the more holistic purpose of schooling advocated within didaktik curriculum cultures as more motivating for students, more inclusive and more likely to lead to positive experiences within education and attitudes towards lifelong learning for students. They also view it as less likely to result in content-heavy curricula, and more likely to result in creativity and innovation, as a less detailed and prescriptive curriculum is more likely to allow space for self-directed and tangential learning.

Opponents of didaktik curriculum culture view it as too vague and aspirational and as naïve both about students' natural inclination to want to learn and their capacity for self-directed learning. They may oppose it for not placing sufficient emphasis on the acquisition of disciplinary knowledge and on the importance of aspiring to a similar curricular experience across different classrooms and different schools and the necessity for teacher accountability. They may view the process of 'coming to be oneself' as predominantly the preserve of family life, peer interactions and extra-curricular activities, rather than as something teachers should be assisting their students with as part of their education. They may view a focus on student wellbeing as the enemy of maintaining standards.

Gleeson (2021) argues that Ireland exhibits features of both Anglo-Saxon/American curriculum culture and Didaktik curriculum culture. Features of Anglo-Saxon/American curriculum culture include an understanding of 'the' curriculum which sees it as being primarily about disciplinary subject knowledge, with a focus on content knowledge, pre-determined learning outcomes and the development of skills and competencies. For Gleeson, this focus on skills and competencies is evidence of the influence of globalisation and market forces on education. In addition, Gleeson describes the division of responsibilities across NCCA, the Department of Education and the State Examinations Commission as consistent with the Anglo-Saxon/American curriculum culture. This is because curriculum 'reform' within this tradition concerns itself with curriculum aims/objectives, structure/scope, subject content, and general approaches towards assessment (the SEC having responsibility for state examinations and the Department of Education having responsibility for implementation, more commonly referred to nowadays as 'enactment') rather than with the pedagogies which are most likely to achieve the aims and objectives which lie at the heart of curriculum changes. However, Gleeson recognises that a commitment to unprecedented

levels of cross-agency collaboration and teacher professional development situates pedagogies elsewhere, rather than ignoring their importance.

Features of the Didaktik curriculum culture evident in Ireland include an emphasis on flexibility for schools to design 'a' curricular programme (from early childhood to the end of transition year) that meets the needs of their students; a focus on active and self-directed learning and on student wellbeing; and attempts to move beyond viewing curriculum as synonymous with subject syllabi/specifications via the introduction of Framework documents (Aistear, the new Primary Curriculum Framework, the Framework for Junior Cycle and, specifically in junior cycle, the 24 statements of learning). Gleeson notes that many of these features were opposed during the introduction of a new junior cycle in the decade from 2012 – 2022 and continue to encounter opposition, for example, in calls for more detailed / more teacher-proof (depending on your perspective) curriculum documents and supporting materials. In this context, Gleeson's concludes that Ireland now has a hybrid curriculum culture. He suggests that the representative nature of NCCA's structures, its council, boards and development groups, 'notwithstanding the merits of partnership' makes the emergence of a singular and entirely coherent curriculum culture unlikely.

While Gleeson's paper was published before publication of the Senior Cycle Review Advisory Report (NCCA, 2022), the shared purpose, vision and guiding principles for a redeveloped senior cycle which emerged from the review are consistent with the hybrid culture he identifies. The shared purpose, for example, is that the educational experience at senior cycle should:

- continue to educate the whole person.
- help every student to become more enriched, engaged and competent, as they further develop their knowledge, skills, values and dispositions in an integrated way.
- serve collective as well as individual purposes in schools and other educational settings and in the wider society.
- help students to access diverse futures, by providing firm foundations for transition to further, adult and higher education, apprenticeships, traineeships and employment; and participation in society and adult life.

## 1.2 The technical form of a curriculum

Curriculum theories shed light on the ways in which conceptualisations of curriculum have changed and evolved over time. It is important to consider how these theories can and should impact on the processes and products of curriculum development NCCA will use in the years ahead. While this chapter highlights the many ways in which curriculum making amounts to much more than a set of official policy documents, the purpose of this paper is to consider the technical form curriculum specifications should take for subjects and modules in a redeveloped senior cycle. For this reason, it is important to examine what the literature has to say about what Luke, Woods and Weir (2013) refer to as the "technical form" of a curriculum. As outlined above, according to Petrina (2004), rather than concerned with what should be learned (the politics of knowledge/skills), or with who should learn what (identity politics), the technical form of a curriculum is concerned with how it should be organised for teaching (the realpolitik of form), though clearly decisions about the format/technical form intersect with questions relating to the position of knowledge, skills, values and dispositions in a curriculum. Theory and form are not unrelated, though they tend to be dealt with separately in the literature. Petrina argues that this separation was a mistake and that

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to contradict the status quo, curriculum theorists will have to dirty their hands with the realpolitik of form and instructional designers will have to clutter their heads with theory (Petrina, 2004, p81).

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Building on work by Eisner and Vallance , Petrina (2004) identifies 5 orientations to organising a curriculum, with curriculum design grounded in any or a mix of these orientations.

Orientations towards organising curriculum	Focus
Academic rationalism	Disciplinary knowledge and cultural canons
Cognitive processes	Intellectual reasoning such as problem solving
Self-actualisation	Psychological conditions, individuality, and personal expression
Social reconstruction / critical pedagogy	Sociological conditions, social justice, and collective reform
Utilitarian	Functional competencies, performance, procedure, and instructional efficiency

**Table 7:** Orientations towards organising a curriculum (Petrina, 2004)

This is significant for two reasons. The first is that, if one accepts these five broad orientations towards organising a curriculum, the logical conclusion is that

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Generic, neutral theoretical orientations and designs for organising [a] curriculum simply do not exist (Petrina, 2004, p82)

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Secondly, according to Petrina, the utilitarian orientation has historically been the least respected of the five. Challenging the low status of the utilitarian orientation towards organising a curriculum allows all involved in curriculum-making

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to reposition curriculum design as again a worthy subject of curriculum studies (Petrina, 2004, p85).

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Academic analyses of ways of organising a curriculum remain relatively rare however. One such analysis comes from Luke, Woods and Weir, in their book *Curriculum, Syllabus Design and Equity* (Ed. Luke, Woods and Weir, 2013). Their perspective is that official curriculum documents should act

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as a map and a descriptive overview of the curriculum... [but an] official curriculum document cannot, by its very definition, contain and express, control and micro-manage what goes on in the classroom...It might constrain and enable certain practices and processes and not others – but the written document is never the same as the lived experience of the curriculum constructed and enacted by teachers and students in classrooms (Luke, Weir and Woods, 2013, p10)

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This official map - the technical form and organisation of curriculum specifications for both subjects and modules - can be more or less detailed, closed or open, high definition or low definition, along a spectrum. Where along this spectrum these documents end up depends on how much decision-making, agency, and room for manoeuvre curriculum bodies, civil servants, and government officials such as Ministers for Education leave in the hands of teachers and schools. Luke, Woods, and Weir come to the same conclusions as other contemporary curriculum scholars, that irrespective of how open or closed curriculum documents are, teachers use (and should use) their professional judgement to shape a lived curriculum and to adapt it – with sufficient supports – to suit the individuals and cohorts they are teaching. A specification, they argue, must achieve a balance between prescription and professionalism but it

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is not and cannot be comprehensive or exhaustive and it cannot and should not prescribe and dictate pedagogic method, approach, style and instructional interaction... [which] constrain, regulate and deprofessionalise teaching (Luke, Weir and Woods, 2013, p11).

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They assert that this balance cannot be achieved by ‘incrementally more explicit and more detailed prescription within curriculum documents’ and that

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Longer, more detailed and extensive syllabi are not the answer (Luke, Weir and Woods, 2013, p30).

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There is no evidence, they assert, that such syllabi result in ‘better, more informed professional practice, or improved outcomes for students and their communities’ (Luke, Weir and Woods, 2013, p30) . Nor do more detailed specifications provide a solution to the problem of the backwash effect of high stakes testing on teaching and learning.

If a curriculum document cannot *be* the lived experience of the curriculum, which is influenced by so much more than an official specification, what then should it be? Luke, Woods and Weir identify many different models of curriculum: an outcomes-based model; a process-based developmental model; a traditional content model; a critical theory model and a generic skills model. Rather than align with a specific model, which all teachers are then expected to adopt irrespective of their values and beliefs, they propose a hybrid approach. They argue that the technical form of a curriculum should

1. set the grounds and directions for the social interactions and knowledge-making that occurs in teacher/student classroom interactions within school subjects as distinct from disciplines (though they are related).
2. recognise and represent diverse learners with different cultural backgrounds, linguistic competences, histories and approaches to learning and learners with special needs and interests.
3. recognise and represent canonical knowledge.
4. aspire to more equitable achievement outcomes, retention and participation rates and certification for all students.
5. integrate the teaching of skills and emerging competencies.
6. implement non-test-based assessment approaches, including classroom-based assessment with the aim of improving and broadening the achievement of students from diverse learning backgrounds and histories.

The distinction they make between a school subject and a subject discipline is important. They argue that from the

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potentially unlimited universe of human knowledge and practice.. the [technical form should] divide, contrast, regroup and derive what will constitute important and valued school knowledge, now, from the unlimited possibilities available (Luke, Weir and Woods, 2013, p6).

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In the debates over subject/module content which inevitably occur during the process of developing a curriculum syllabus/specification, the purpose is not to include every aspect deemed important by disciplinary experts, but rather, keeping the purposes of education in mind, to make

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a motivated selection from identifiable intellectual, scientific, and aesthetic paradigms within a traditional or emergent field or discipline and also from particular approaches to an applied domain of practice... with conscious and deliberate inclusions and exclusions from a vast range of possible disciplinary contents available (Luke, Weir and Woods, 2013, p12).

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They also argue for a three-stage design process which is largely reflective of NCCA's approach to the development of curriculum syllabi/specifications, as indicated in brackets.

1. a review of current syllabi/specifications and best practice in the field (background paper)
2. participatory curriculum-making to write the official document (development groups)
3. a process of trial, feedback and revision (two consultations and early enactment reviews)

The model they propose for the technical form of designing a curriculum (see below) is reminiscent of what Gleeson describes above (p17-18) as a 'hybrid' curriculum culture.

Luke, Woods and Weir's model for the technical form of curriculum specifications (2013, p30 - 36) argues that they should.

- be succinct.
- be written in teacher accessible, professional language.
- cover a phase or year.
- outline the philosophy and logic of the subject/module in question.
- outline the overall educational aims of the subject/module and their potential benefits for students, communities and society.
- recognise the diverse communities of learners the subject will be taught to and design accordingly, precluding statements within specifications / modules that are not based on due consideration of all the system's learners.
- provide a broad summary of developmental scope and sequence, not strictly by age or year, to accommodate a range of developmental capacities.
- identify domains (strands in Ireland) and a blend of specific expected learnings, which should be brief and accessible and include only those learnings deemed essential for all students.
- provide a teacher prompt and several heuristic questions alongside each expected learning.

- include a common language for describing student achievement in the subject, to set high aspirational standards for all students and to be used when reporting achievement to parents.
- provide indicative standard statements of key domains and learnings based on an agreed model of cross-curricular capabilities, to guide teacher judgements.
- outline standardised assessment and moderated assessment.
- outline school and teacher assessment, with more detail available in support materials, such as exemplars, models, common tasks and project assessment banks.

They argue that specifications should be accompanied by fully vetted professional online resources which are

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adaptable, flexible and continuously under expert professional review... [and advise on] materials selection, unit and lesson planning, classroom and school-based assessment pedagogical strategies and the specific needs for identifiable student cohorts (Luke, Woods and Weir, p30, 2013).

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This detailed proposal for how the technical form of a curriculum might be approached is a relatively rare example of an academic discussion of the technical form of syllabi/specifications. As indicated in chapter 1, it appears that, in making decisions about the technical form of a curriculum, most curriculum agencies have tended to rely on a combination of established practice, looking at what other countries and jurisdictions are doing, and feedback from teachers on what they find most useful when planning a curriculum, as well as the limited research that is available on this topic. Is it also likely that robust discussions within curriculum agencies about the technical form of their curriculum documentation takes place but is not documented in a paper of this kind. Hence, as indicated in the introduction, this paper aims to increase transparency for those interested in the factors influencing the technical form of specifications in Ireland currently and in the years ahead.

### 1.3 International trends in curriculum policy and practice

Before moving on to Chapter 2's exploration of the history of the technical form of curriculum syllabi/specifications in senior cycle in Ireland, it is important to look at overarching international trends and changes in how various jurisdictions approach curriculum development, as these are relevant to decisions about the technical form of curriculum specifications. While these vary in significance and prominence depending on the country or jurisdiction in question, it is still possible to identify broad shifts and changes. Mark Priestley and Gert Biesta, and Claire Sinnema and Graeme Aitkin, in the book *Reinventing the Curriculum: New Trends in Curriculum Policy and Practice* (2014) summarise these in various ways. Daniel Alvunger et al also offer an analysis of curricular trends in the concluding chapter of *Curriculum Making in Europe: Policy and Practice Within and Across Diverse Contexts* (2021). To avoid repetition, these trends are included once, even where they are identified multiple times by the curriculum scholars listed.

Sinnema and Aitkin identify the following goals and emphasises as those most frequently evident in curriculum developments which came into effect between 2004 and 2012 in Scotland, Wales, Northern Ireland and New Zealand and in changes which commenced in 2012 in Australia, England and the United States.



Trends in Curriculum Development	
Common goals	Common emphases
Curriculum as a lever for improvement	Competencies
Curriculum serving equity goals	Values
Curriculum as future focused	Pedagogy
Curriculum coherence	Student agency
	Partnerships
	Reduced prescription

**Table 8:** Trends in Curriculum Development (Sinnema and Aitkin, 2014)

When considered in light of the Senior Cycle Review Advisory Report (NCCA, 2022), the first two of these common goals were widely evident in Ireland, as elsewhere, namely a desire to redevelop Senior Cycle so that it is more equitable, meets the needs of all learners and improves their experience of their final years of schooling. In many jurisdictions, including in Ireland, the emphasis on equity is also an emphasis on the values students should develop, in the context of fairness, social justice and citizenship.

Review feedback was more nuanced on the question of whether the curriculum should be ‘future focused’. A strong desire emerged to make this phase of education valued in its own right, and not just as a portal to the future. At the same time, there was wide recognition of the need to provide a holistic education, which enhances the integrated development of knowledge, skills, values and dispositions and which prepares young people for their lives beyond school; of the need to offer more varied pathways within and beyond senior cycle, instead of the current over-emphasis on transition to further and higher education; of the importance of broader modes of assessment and of the importance of equipping learners with a positive disposition towards lifelong learning.

On the question of curriculum coherence, in many jurisdictions this includes calls to reduce content and make the curriculum less crowded and fragmented. Curriculum coherence can also relate to concerns that there is no national coherence in the curriculum students experience across an entire country. This most frequently emerges as a concern in state-based countries like Australia and the United States, and in countries with a national curriculum but no individual subject or module specifications, like New Zealand. Note that concerns about curriculum coherence, as discussed by Sinnema and Aitken, did not emerge as a significant trend in senior cycle review feedback. Instead, there were calls for a balance to be struck in a redeveloped senior cycle between greater flexibility and overall coherence of experience for learners; and for coherence in resourcing, as curriculum flows through the system at different levels and in different sites of activity. There were also calls for a different kind of curriculum coherence, namely a more coherent offering of varied pathways through senior cycle, to meet the needs of all learners. However, following Senior Cycle review, curriculum coherence (calls to reduce the curriculum and make it less crowded and fragmented) came to prominence during school closures as a result of the Covid19 pandemic, in the context of concerns over learning loss. In relation to the emphases evident in many international curriculum developments, several of those identified by Sinnema and Aitken were much discussed during Senior Cycle Review. Three of these – [reduced] **prescription**; and **competencies** and **values** are explored below, in chapters 4 and 6 respectively.

The importance of **partnerships** both to the process of redeveloping senior cycle and to the senior cycle phase of education was emphasised throughout the review and partnerships feature in the eight guiding principles of a redeveloped senior cycle. This was not limited to partnerships between schools, teachers and parents (which is the emphasis in Sinnema and Aitkin's research), but also included as aspiration for enhanced community-based partnerships, partnerships between schools and businesses to facilitate work-based learning and partnerships with agencies such as SOLAS and QQI, to contribute to policy learning and alignment.

Increased emphasis on **student agency** and the right of students to have a voice in decisions relating to their education is another trend in curriculum development identified by Sinnema and Aitken (2014). They suggest policymakers do more to acknowledge the complexity of student agency in relation to the curriculum, whether it is embedded in the curriculum's guiding principles, in the right to be consulted about their experiences of schooling, and/or in the balance between teacher and student-initiated learning. They assert that student participation in response to teacher decisions and demands may result simply in social control, as opposed to the competence, self-control, and action that can lead to empowerment and agency. In Ireland, currently, there is arguably a greater emphasis on student voice than student agency. Consultation with students is integrated into NCCA's processes of curriculum development (see chapter 2), a student representative was recently appointed to NCCA's Council for the first time, and the guiding principles of a redeveloped senior cycle emphasise students' growing independence and the importance of supporting them to navigate a personal pathway through senior cycle.

Three of the trends identified by Sinnema and Aitken as major international trends in curriculum development are also identified by Priestley and Biesta. Whilst **pedagogies** are a crucial element of the enacted curriculum, the articulation and/or specification of pedagogies in curriculum documents is contested and varies from jurisdiction to jurisdiction (see chapters 3 and 4). The turn towards **competencies-based education** and what this might mean for the curriculum and in students experiences of schooling; and **reduced prescription** in the curriculum internationally are outlined below and in chapters 4 and 5. **It is important to reiterate that the trends outlined here and below are those identified by curriculum scholars Mark Priestley and Gert Biesta, and Claire Sinnema and Graeme Aitkin, in the book *Reinventing the Curriculum: New Trends in Curriculum Policy and Practice* (2014) and by Daniel Alvunger, Tiina Soini, Stavroula Phillippou and Mark Priestly in the concluding chapter of *Curriculum Making in Europe: Policy and Practice Within and Across Diverse Contexts* (2021).**

### **Curriculum challenges caused by accelerating cycles of policy innovation.**

Many researchers have warned of the dangers of curriculum changes taking place within very tight timeframes, and/or alongside other changes to education policies, as this can lead to a 'pattern of continual crisis and reactive innovation' (Priestley and Biesta 2013, p2). Bearing this in mind, during NCCA's Senior Cycle Review, colleagues from the Education Division of the OECD were invited to compare Ireland's education policy changes with other jurisdictions internationally. They noted Ireland as a country whose education policy changes are more medium to long term in nature. However, it is important to acknowledge that two cycles of curriculum change in post primary schooling across a decade to fifteen years, alongside other education policy changes, presents challenges for all involved.

## **The 'learnification' of education, often encompassing a failure to ask questions of educational purpose, including 'what are we learning?' and 'why?'**

NCCA's Senior Cycle Review dedicated significant time to exploring these questions with teachers, students, parents, researchers, policymakers and other stakeholders, resulting in the purpose, vision and guiding principles of a redeveloped senior cycle, as outlined in the Senior Cycle Review Advisory Report (NCCA, 2022). However, articulating these purposes and achieving them consistently in practice over time are two different things, and it will be important to continue to embed these agreed purposes, vision and guiding principles throughout the process of senior cycle redevelopment and the enactment of those changes in practice.

## **A movement from extreme prescription of the curriculum to less detailed curriculum frameworks and specifications.**

While this offers teachers greater agency, respects their professional judgement, and has led to the re-emergence of interest in school-based curriculum development, it has been critiqued for inadequate consideration of the supports needed for school-based curriculum development and of the complexity it entails for schools, groups and individuals. See chapter 4 and research by Biesta and Priestley (2014) and Priestley (2019) for further discussion of this issue.

## **The continued articulation of the curriculum in terms of assessable outcomes.**

Even where the curriculum is relatively open in relation to inputs (broad learning outcomes which give scope for teacher judgement and choice, to adapt the learning for their students), where it is closed in relation to outputs i.e. where it is combined with accountability mechanisms, cultures of performativity, and/or so-called 'high stakes' testing, this can result in continued or more pervasive emphasis on assessment-driven teaching. See chapter 4 for further discussion of this issue.

## **Emphasis on the development of competencies.**

This is often an attempt to resolve tensions between so-called soft skills (often perceived as serving economic and/or civic objectives) and knowledge, particularly the kinds of powerful knowledge which can help people to critically engage with the world. See chapter 5 for further discussion of this issue. Many of these trends are again evident in Alvunger et al's (2021) exploration of recent international trends in curriculum development in Europe, including competencies-based education; reduced prescription and the opportunities and tensions this creates; and the increasing influence of supra-national agencies and organisations. The most significant and recent trend in curriculum development they identify is the importance of the meso site of activity as a 'nexus' and a space 'in between', with those inhabiting meso sites (generally those designing and facilitating professional development) playing

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a significant role in curriculum making, mediating and translating messages flowing from supra and macro, as well as from micro and nano sites of activity (Alvunger et al, 2021, p283).

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Alvunger et al argue that, where the focus of professional learning and the skills of those facilitating this learning is on sense-making, this can enhance teacher agency, while a performative and instrumental emphasis in teacher professional development can hamper both teacher agency and support for change in the system. For this reason, they argue for

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social sites of curriculum making that facilitate teacher collaboration ( Alvunger et al, 2021, p287).

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They identify 5 features of good quality curriculum making, namely

1. Participatory curriculum making
2. Accountability based on trust
3. The importance of middle-ground and mobility in curriculum-making
4. Balanced regulation – sufficient guidance as well as room for dialogue
5. Agency of the educational system.

Many curriculum theorists have warned that it is essential for each country and jurisdiction to allow for the curricular traditions and character of their system and be(a)ware of converging effects in national systems and curricula (Lingard, 2021). However, it has recently been acknowledged, by Lingard and others, that these convergences may not be as advanced as once suspected, given the nation-by-nation response to the Covid19 pandemic which emerged during and after periods of school closures.

## 1.4 Chapter summary

Understandings of curriculum have changed and evolved over time, as curriculum became a field of study in its own right. Much of the focus of curriculum theory has been on what should be learned and on who should learn what. There has been less focus on how a curriculum should be organised, a.k.a. its ‘technical form’). Hilda Taba in the 1960s proposed that instead of arguing for the primacy of subject content, skills, the needs of learners or the needs of society, a curriculum should find a way to combine them in a comprehensive and coherent way. This idea of combining different elements in a curriculum document is reflected in many curriculum syllabi/specifications both nationally and internationally, as illustrated in chapter 3. While the research literature may separate out and label various approaches towards organising a curriculum (see table 5), in practice, elements of each of these ideologies/ orientations/models often co-exist within curricular documents rather than one taking precedence over all others.

3 Curriculum ideologies Kelly (1977 revised 2009)	5 curriculum orientations Petrina (2004)	5 curriculum models Luke, Weir and Woods (2012)
Curriculum as content and education as <i>transmission</i>	Academic rationalism	Traditional content based
Curriculum as product and education as <i>instrumental</i>	Cognitive processes	Outcomes based
Curriculum as process and education as <i>development</i>	Self-actualisation	Process-based, developmental
	Social reconstruction and critical pedagogy	Critical theory based
	Utilitarian	Generic skills based

**Table 9:** Curriculum ideologies, orientations and models (Kelly 1977/2009; Petrina 2004; Luke, Weir and Woods 2013).

When a curriculum template is being populated, those involved in the process can approach the task from a range of curriculum traditions, as outlined in Table 6 below.

4 curriculum traditions Reid (2006)	
Systemic	Seeks an approach which works in all contexts and with all subjects
Existentialist	Focuses on the experiences and autobiography of learners
Radical	Critiques and rejects the institutions of curriculum and schooling entirely
Deliberative	Recognises the value of the other traditions and deliberates to achieve consensus

**Table 10:** Curriculum traditions (Reid, 2006)

The individuals within the development groups who design curriculum specifications; the stakeholders who review and provide feedback on these specifications and on the wider senior cycle curriculum in its entirety; and those who participate in public consultations on phases of education and on draft specifications, likely have varying orientation(s) towards and beliefs about curriculum, curriculum development and curriculum making. This inevitably presents challenges when designing a national curriculum document but also potentially enriches the process, as diverse perspectives are considered and feed into the draft and final versions of specifications. The tradition which best describes the process used by NCCA is the deliberative tradition.

There are many different ways to describe the processes used to create a specification (table 3).

Luke, Weir and Woods (2013) – process	Alvunger et al (2021) – features of good quality curriculum-making
1. a review of current specifications and best practice in the field	Participatory
2. participatory curriculum-making to write the official document	Accountability based on trust
3. a process of trial, feedback and revision	Importance of middle-ground and mobility
	Balanced regulation – sufficient guidance as well as room for dialogue
	Agency in the education system

**Table 11:** Processes and features of curriculum development and curriculum making.

Taking into account the diversity of perspectives and beliefs about curriculum which exist, Luke, Weir and Woods (2013) propose a hybrid approach to the technical form of curriculum specifications. They reject the alternative, that of using just one model, which all teachers are then expected to adopt irrespective of their values and beliefs, because this would, by design, alienate at least some of the teachers who will be using the curriculum specification to inform their teaching, and student learning and assessment. However, it is understandable that in cases where individual teachers’ beliefs about curriculum and education fall firmly into one ideology, orientation or model (see table 5), these teachers may find a hybrid approach challenging.

It is noteworthy that they recommend a hybrid approach, as Gleeson argues that Ireland has two distinct curriculum cultures at work, namely an Anglo-Saxon/American curriculum culture and a Didaktik curriculum culture, whose interplay has already led to the development of a hybrid curriculum culture in Ireland (Gleeson, 2021). The main features of each are captured in table 8 below.

Anglo-Saxon/American curriculum culture	Didaktik curriculum culture
Focus on subjects	Focus on student formation and wellbeing
Emphasis on skills	Emphasis on autonomy in learning
Detailed learning outcomes	Flexible and adaptable learning (sometimes expressed in the form of learning outcomes?)
Purpose of education is developing human capital to enhance employability and economy	Purpose of education is coming to be more fully yourself and taking your place in society
Knowledge is value-free, same for everyone	Knowledge is never neutral or value-free

**Table 12:** Main features of Anglo-Saxon/American and Didaktik curriculum cultures (adapted from Gleeson, 2021)

The most appropriate organisation or technical form of curriculum specifications in a redeveloped senior cycle will thus likely be a hybrid one. Before considering this in more detail, it is important to establish how the technical form of curriculum syllabi/specifications for senior cycle subjects and modules have evolved over time and this is the focus of chapter 2.

## 2. A brief history of curriculum design and the technical form of specifications in Ireland

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### 2.1 Introduction

The way a curriculum is presented in official syllabus documents can be described as

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an institutional structure for mapping human knowledge and human subjects; the divisions and categories used to specify what the curriculum will be at this time and in this context' (Luke, Woods, and Weir, 2013, p6).

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Current deliberations on the nature of curriculum specification design and the technical form of specifications for subjects and modules at senior cycle should build on a process of thinking and development that has been taking place since the foundation of the state. This section will seek to locate present considerations relating to the technical form of curriculum specifications for subjects and modules in a historical context, noting some key developments that affected or influenced senior cycle curriculum specification design. John Coolahan's seminal work *Towards the Era of Lifelong Learning: A History of Irish Education 1800-2016* (Coolahan, 2017) contributed significantly to sections 2.2 and 2.3 of this chapter. Sections 2.3 and will also examine the technical form of a sample of such documents drawn from a range of different subjects, with the aim of enhancing awareness of how these documents have evolved over time. It is hoped that this historical perspective will inform considerations about the technical form of curriculum specification documents in the context of a redeveloped senior cycle.

### 2.2 An overview of relevant curriculum developments 1920s – 1960s

Curricular concerns were a feature of educational discourse right from the foundation of the state and focused on the promotion of Irish nationalist educational values, centred largely on the concept of 'gaelicisation', primarily represented by the Irish language. Dáil Éireann hosted a conference on intermediate education in August 1921. The 'gaelicisation' imperative was evident in its main recommendations. These included that examination papers for all subjects, with the exception of English, mathematics and science, be published in both the English and Irish languages; that the framing of examination papers in history and geography should allow for a student to achieve full marks by answering questions solely relating to Ireland and that, significantly, the Irish language be made a compulsory subject for study. In February 1922, the Provisional Government took over the administration of education and issued a circular to schools in relation to these proposals. A commission on secondary education, which concluded its deliberations in December 1922, had the following terms of reference:

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'to draft a programme which would meet the national requirements, while allotting its due place to the Irish language (cf Coolahan, 2017).'

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The concept of 'national requirements' is indicative of a determination to mould a curriculum that would reflect the ethos of the new state. The Department of Education, founded in June 1924, assumed control over post-primary education. The recommendations of the commission on

secondary education provided the basis for the programme for secondary schools, which came into operation in August 1924, and which continued to endure through various iterations, becoming known as the Rules and Programme for Secondary Schools.

The Rules and Programmes for Secondary Schools was published annually over many years. The Rules section set out various administrative and procedural regulations relating to such matters as the recognition and funding of schools and the conduct of examinations. The section dealing with curriculum was brief, setting out the subjects in which schools were obliged to provide instruction. The most comprehensive part of the document relates to programmes, which in the early days meant the Intermediate and Leaving Certificates (formalised in the Intermediate Education (Amendment) Act of 1924. Essentially, the programmes sections listed the course content that should be included in the syllabus for each subject, with relevant assessment arrangements also accounted for. Interestingly, this model would remain in place for several decades until the emergence of more detailed syllabus documents in the 1990s.

From 1924, the Department of Education prescribed the general content expected to be covered for each subject, published in its Rules and Programme for Secondary Schools. Initially, it did not exert an overly restrictive role in this regard, allowing schools to develop courses and submit them for approval. It is striking that the tone of some communications to schools from this time reflects the nature of current thinking about the value of recognising the capacity of schools to make decisions based on their specific contexts, with schools accorded a significant degree of autonomy, both in terms of the range of their programmes and the choice of books. The use of textbooks was taken as a given, and as a matter on which schools could exercise their own discretion. However, due to a dearth in secondary school textbooks written in Irish, the state sponsored a publishing company to produce such textbooks, in keeping with its policy of promoting Irish more generally.

Under the Intermediate Certificate programme, students were required to pass five subjects to gain certification. These subjects were arranged in groups, from which subjects had to be chosen as follows: (1) English or Irish, (2) another language other than the one taken in (1), (3) mathematics or (for girls only) arithmetic, along with any one of science, domestic science, drawing or music. (4) history and geography. The gender distinction is notable here. Irish was a compulsory subject at Intermediate level from 1928 and became compulsory for Leaving Certificate in 1934, arrangements which remained in place without change until 1973. Achievement of certification at Leaving Certificate level also required students to pass five subjects, which had to include both Irish and English. The 1930s saw the introduction of higher and ordinary courses within subjects, a practice that remains in place in senior cycle.

The Vocational Education Act was a significant development in 1930, recognising the need to formalise technical and vocational instruction. In 1937, the nature of curriculum was subject to some criticism from Taoiseach Eamon de Valera, who convened a conference with the then Minister for Education and other officials, including inspectors, to outline his concerns about the perceived vagueness and overly extensive nature of curriculum provision. He believed that the broad range was not conducive to what he considered to be the primary task of 'gaelicisation'. A further development in the late 1930s was that prescribed textbooks were reintroduced, meaning in effect that these books were syllabus documents. These changes illustrate some key observations made in chapter 1, namely that



- the extent to which the curriculum is – or should be – decided at national, regional or local level is contested
- how open or specific the curriculum should be is contested and
- at times, both the content of the curriculum and the control exerted over schools via prescription of the curriculum are subject to political influences and interventions.

The political, economic and social turbulence of the inter-war years, and the period of the Emergency and post-World War II developments, were not conducive to significant developments in education. However, a Council of Education was convened and held deliberations about the curriculum between 1954 and 1960. The findings and conclusions that emerged were of a distinctively conservative nature, somewhat out of tune with the prevailing mood of the 1960s more generally in relation to culture, politics and society, and indeed education. The report concluded that the curriculum that existed was the appropriate model, with humanist and academic educational ideals at its core, while schools were identified as the appropriate place for the promotion and inculcation in young people of an Irish identity and of religious values and beliefs. The literary and academic character of the curriculum continued. It is interesting to note that the curriculum was explicitly seen as a vehicle to respond to the needs of society as well as for the transmission of content knowledge. Who a person becomes as a result of their education was a consideration, so it is important to note that, even sixty plus years ago, the curriculum was not exclusively concerned with what the teacher teaches. However, while an 'ideal' Irish Catholic identity was aspired to in this era, today, this focus on who a person becomes as a result of their experiences in education is much more open, with an ever-evolving embrace of and respect for diversity.

Despite the somewhat conservative nature of the Council of Education report (1962), several very significant changes to education, with implications for the nature of curriculum, occurred during the 1960s and early 1970s, reflecting the significant political, cultural and societal changes taking place more broadly in that era, both in Ireland and indeed across Europe, America and the wider world. These developments included the following:

- Comprehensive schools, a forerunner of the community school model, were introduced in localities where there were no post-primary schools, offering education up to the end of the three-year Intermediate Certificate. This countered, to some extent, the practice of vocational and secondary schools operating side by side in the same towns or regions.
- Vocational schools also began to offer the Intermediate Certificate programme.

- In 1966, the then Minister, George Colley TD, called for increased co-operation and sharing of facilities between small post-primary schools of different patronage, to broaden students' curricular options<sup>2</sup>
- Later in 1966, Minister Donagh O'Malley, who succeeded Colley in July of that year, declared that free post-primary education would be made available for all students from 1967. Student numbers rose from 148,000 in 1966/7 to 185,000 in 1968/9.
- In 1972, the school leaving age was raised to 15 years.

The cumulative impact of these various developments had ramifications for the curriculum. A wider range of subjects was introduced, with a greater emphasis on practical subjects. Secondary schools began to offer a more comprehensive curriculum, further narrowing the distinction between secondary schools, community schools and technical/vocational schools. Therefore, while the technical form of curriculum had heretofore consisted largely of descriptions of course content or subject knowledge to be acquired, broader educational changes and developments were leading to a changing culture where curriculum, and the articulation of curriculum, would become more sophisticated.

### 2.3 An overview of relevant curriculum developments 1970s – 1980s

During the 1970s, there were numerous developments that signalled new thinking about curriculum and pedagogy. There was a move in syllabus design in subjects such as history and geography towards a greater emphasis on social and economic themes, while literature courses began to recognise contemporary writers and authors. There was also a move towards greater individual project work by students, a development mirrored by the introduction of science laboratories in schools to allow for more practical and experiment-based work. The teaching of modern languages saw language laboratories introduced to counter the traditional grammar and translation focus of language teaching. Irish saw the introduction of an oral component at Leaving Certificate level, soon worth 25% of marks for the subject. In 1973, the requirement that Irish be a compulsory subject for the awarding of Intermediate and Leaving Certificate was dropped. New subjects, such as metalwork, engineering, accounting and business organisation entered the curriculum, reflecting the changing social and economic context, while Latin, for so long a dominant subject, dramatically declined in prominence, not least due to changes in Catholic liturgical practices heralded by the Second Vatican Council in the 1960s.

A further development of note in the 1970s was that new thinking about curriculum saw the emergence of interesting projects and initiatives that sought to move beyond the narrow confines

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<sup>2</sup> This issue remains a concern, as evident in feedback received during NCCA's Senior Cycle Review (Banks, McCoy and Smyth, 2019).

of state prescribed subject syllabi. The Curriculum Development Unit, under the auspices of Dublin VEC, did much interesting work. One initiative was the development of alternative curricula in different learning areas with an emphasis on subject integration and creating resonances across subjects. The first iteration of Transition Year was introduced in 1974 and the programme was developed and expanded in greater detail in the early 1990s. It aimed at supporting students' holistic development through an interdisciplinary course after junior cycle and without the constraints of examinations or state syllabi.

The Curriculum and Examinations Board (CEB), the forerunner of NCCA, was established in 1984. Its brief was

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to report to the Minister on the desirable aims, structure and content of the curriculum at first and second levels.

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Interestingly, a Government White Paper on education in 1980 offered a definition of curriculum as 'the totality of learning experiences to which the pupil is exposed' (Gleeson, 2021, pg5). The White Paper further clarified that for the purposes of the chapter in which the definition is proposed, 'curriculum will be taken to mean simply the range of subjects, with their individual syllabi, that are approved for study'. The tension between viewing curriculum as the totality of student experiences versus viewing it simply as a collection of subjects remains a challenge to curriculum coherence to this day.

Following the publication by the Department of Education of a discussion document, *The Ages of Learning*, in 1984, the CEB issued recommendations in a 1986 report entitled *In Our Schools-A Framework for Curriculum and Assessment* (CEB, 1986). This report was noteworthy in that it proposed the establishment of course committees for subjects to specify the knowledge and understanding, concepts, skills and attitudes students were to develop through their learning, as outlined in the relevant syllabi. These course committees, which subsequently evolved into subject development groups, comprising of stakeholders and partners in the education system, would remain in place on a semi-permanent basis until the formulation of the first development group (English, in 2013) to support changes to the Junior Cycle, arising from the Framework for Junior Cycle (2012 and 2015). The report also recommended changes to the Leaving Certificate programme that reflected the increasingly diverse needs of students, with Transition Year and Vocational courses noted for development, thus acknowledging the limitations of the existing model.

Given the purpose of this paper, it is important at this juncture to consider the technical form of some of the subject syllabi that date from the 1970s and 1980s. Heretofore, syllabus documents essentially delineated subject matter to be taught, with accompanying assessment arrangements. Subjects whose syllabi date from this period include Physics and Chemistry (pre 1970s), Art (1971), Hebrew Studies (pre-1987), Construction Studies (1983), Engineering (1983), Latin (1983), and Ancient Greek (1983). For the purposes of this paper, the technical form of four of these subjects: Art, Ancient Greek and Latin, and Construction Studies, will be briefly explored, to offer a glimpse of what the technical form looked like in this era.

## Technical form: Leaving Certificate Art 1971

The Leaving Certificate Art syllabus from 1971, titled Art (including Crafts) remained on the curriculum until 2021, although some revised assessment arrangements were introduced for the 2018 examination. A new specification has been developed and is currently being implemented in schools.

### Aspects of the technical form of this syllabus worth noting

The old syllabus consisted of just over four pages. It does not set out an aim or rationale, other than to state that the course should be broadly based, similar to the Art course at Intermediate Certificate, and that

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it is important that a sense of unity be maintained throughout the different sections of the syllabus in order to avoid a system of isolated lessons.

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The syllabus document sets out examination arrangements whereby 'candidates' will be required to take four different papers, one for each of the following: Imaginative composition or Still Life; Design or Craftwork: Life Sketching; and History and Appreciation of Art. The syllabus features one page of a suggested outline of how teachers might design a course of study to ensure 'a sense of unity'. Therefore, it is evident that the focus is strongly on outlining what is to be taught and learned, with little other detail.

## Technical form: Leaving Certificate Ancient Greek and Latin 1983

Ancient Greek and Ancient Latin reflect the technical form of syllabus design that was used across the curriculum for many years. Although separate subjects, the technical form for each was essentially the same.

### Aspects of the technical form of this syllabus worth noting:

The entire syllabus for each subject consists of two pages. One page sets out arrangements for Ordinary Level and the second for Higher level. Each page sets out what students should study with reference to four headings: Translation/scansion; prescribed texts; unprescribed texts; and history including art and literature. Arrangements for the Leaving Certificate written examination, which was the only form of assessment used for these subjects, including the allocation of marks, are set out. The following passage is taken from the Ordinary level course arrangements for Ancient Greek. It sets out expectations for the history section of the course:

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Literary questions of a general nature will be set on the life and works (including their relevant background) of the major Greek authors from Homer to Aristotle. A study should be made of the art of the Greeks. Questions of a general nature will be set and candidates will be expected, through the use of film strips and modern illustrations to have an acquaintance with examples of sculpture, archaic and classical (including architectural sculpture), the architecture of temples, the Attic black and red figure vase paintings.

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The syllabus content is essentially delineated in relation to examination questions. No aims or objectives or course rationale is included. Learning outcomes are not used. There was no key skills focus in senior cycle at this time. Students' holistic development and education are not referenced (though they may well have been valued by many teachers in practice), and learning is viewed exclusively through the lens of subject content.

### Technical form: Leaving Certificate Construction Studies (1983)

The Construction Studies syllabus, when compared to the subjects described above, attends in more detail to broader aims, including reference to knowledge and skills, as evident below.

Aims
<p>The (Higher and Ordinary level) courses have been designed so as</p> <ol style="list-style-type: none"> <li>1. To introduce pupils to the knowledge and skills involved in construction technology and construction materials and practices; through theoretical study and integrated practical projects</li> <li>2. To develop the pupils' ability to communicate ideas and information by appropriate methods, and to encourage them to apply accurate observations and scientific investigation through the exploration of materials and procedures</li> <li>3. To contribute towards their general education and</li> <li>4. To provide a basis for those who may wish to study construction technology at third level.</li> </ol> <p>The study of the subject should be primarily related to domestic buildings. It is, however, expected that the teacher will deal with the subject in its broader aspects. Regards should be had to Consumer Education as, for example, on considering the merits and demerits of materials and assembly details. Pupils should be encouraged to develop positive attitudes to their architectural heritage and the impact of the construction industry on the environment.</p>

**Table 13:** Construction Studies Syllabus Aims

#### Aspects of the technical form of this syllabus worth noting:

The inclusion of an overall aim for the subject is notable here. Of further note is the reference to both knowledge and skills, and the integration of theoretical and practical learning envisaged. The recognition that learning in the subject informs students' overall or general learning is also striking. This is also evident in the intention to develop students' ability to communicate ideas and information. The recognition of links across phases of learning and the importance of transitions is also noted here, in this instance looking at students' preparation for third level engagement.

The technical form of subject syllabi from the 1970s and 1980s indicates that, historically, the practice was focused very much on clarifying examination arrangements and subject 'content' to be covered. There is little rationale for the importance or relevance of the subject in question, or the aims and objectives which study of the subject might achieve. Subjects were seen as separate and discrete from each other, with little sense of resonances across subjects. The focus of education was on the development of disciplinary knowledge, with some subjects having strong practical components, revealing an awareness of the importance of 'knowledge in action'. The

technical form of Construction Studies stands out as significantly different and provides some early insights into how the technical form of syllabi might evolve in the years ahead.

## 2.4 An overview of relevant curriculum developments 1990s

Gleeson (2021) notes that an OECD report from 1991 makes for interesting reading in the context of curriculum design. The report noted that the Irish secondary level curriculum is a derivation from the Classical Humanist tradition with an overlay of technological subjects. Some observers at the time criticised how discourse about education seemed hugely focused on how it related to the economy, to the detriment of other themes such as cultural identity, language, civic competence and moral development (Gleeson, 2021, p.717).

In 1991, the CEB (which later became the National Council for Curriculum and Assessment) published a position paper called *The Curriculum in Senior Cycle – Structure, Format and Programmes*, which favoured an inclusive model for senior cycle, with flexibility to cater for a diverse range of students' needs. The Leaving Certificate Vocational Programme (LCVP) provided for an expanded range of curriculum options along with three mandatory link modules – enterprise education, preparation for work, and work experience. The Transition Year Programme was extended to all post-primary schools from 1994. The Leaving Certificate Applied (LCA), aimed at preparing students who did not take Leaving Certificate Established (LCE), for adult and working life, was introduced in 1995. It was structured around three main areas – vocational preparation, general education, and vocational education – and students were required to undertake a range of practical tasks. Both the LCVP and LCA were novel in terms of approaches to assessment.

### Technical form: Leaving Certificate Applied Horticulture/Agriculture (1995)

The Leaving Certificate Applied programme is a two-year Leaving Certificate programme aimed at preparing students for adult and working life. The programme sets out to recognise the talents of all students and to provide opportunities for developing personal responsibility, self-esteem and self-knowledge, and helps students apply what they learn to the real world. The two-year programme consists of four half-year blocks called sessions. Achievement is credited in each session. Courses are offered in three main areas: Vocational Preparation; General Education; and Vocational Education. The modules for LCA that were introduced in 1995 remain unchanged except for those in the table below, which were revised in 2017/2018 and introduced in 2022.

English and Communication	2022
Information and Communication Technology	2022
Introduction to Information and Communication Technology	2022
Mathematic Applications	2022

**Table 14:** Leaving Certificate Applied, newly developed modules

As an example of the technical form of curriculum in 1995, Horticulture/ Agriculture is explored here. This is an option within the Vocational Education area.

### Aspects of the technical form of this syllabus worth noting:

The technical form is laid out as a module descriptor. There are six modules, from which students select two. The modules are:

- Basic horticulture
- Garden design
- Floristry, fruit and vegetables
- Forestry
- Grass
- Milk and meat production

A rationale for the entire subject is set out at the beginning of the document, with a brief description of each module and some general recommendations. Then, for each of the six modules, a common format applies:

- Module aims
- Units within each module
- General recommendations
- Learning outcomes for each unit
- Teacher guidelines for each unit
- Resources for each unit

As an example of a unit, the module Garden Design is considered here. Under this module, there are four units: Gardens and their uses; Garden design; Plants and their uses; and Lawns. A purpose is outlined for the module as a whole: namely, that 'This module in garden design is part of the Vocational Education element of the Leaving Certificate Applied Programme. It is a specialist module that will enable the students to acquire a basic knowledge of skills in the design, construction and maintenance of gardens'. Aims for the module are then set out. The module aims to:

- introduce students to the concept of garden design
- encourage students to investigate aspects of garden design and relate them to a garden plan
- familiarise the student with the basic maintenance of a garden area.
- The following example of how a unit is set out is offered:

#### Unit 1: Gardens and their uses

Learning outcomes	Teacher guidelines
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<p>The student will be able to:</p> <ol style="list-style-type: none"> <li>1. list the uses to which gardens can be put</li> <li>2. compare an actual garden with his or her ideal garden as observed in resource materials</li> <li>3. state the main features that contribute to good design</li> <li>4. identify different garden styles</li> <li>5. select structures that can be used when creating a garden.</li> </ol>	<p>Brainstorming uses of gardens from the familiar to the more imaginative is useful as an introduction. A selection of garden design/gardening books, magazines and photographs should be available to the students to aid their research. A visit to one or a number of planned garden developments would probably be of benefit sooner rather than later in the course of this module. Having identified their own preferred style and absorbed the main components of good design students will be in a position to assess actual gardens critically.</p>
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Thus, we can see that language around rationale, aims and learning outcomes is evident in the design of these modules, with teacher guidelines and resources integrated into the technical form as well. Also of note is the vast range of choice on offer to allow schools to design programmes that meet students' needs in their particular context.

The 1990s also saw subject redevelopment in the mainstream Leaving Certificate Established. Table 11 below lists the Leaving Certificate subjects that were redeveloped in the 1990s:

Accounting	1995
French	1995
German	1995
Italian	1995
Spanish	1995
Business	1997
English	1999
Music	1999

**Table 15:** Leaving Certificate Subjects redeveloped in the 1990s

## Technical form: Leaving Certificate English (1999)

Further evolution of the technical form of Leaving Certificate syllabi is evident in the Leaving Certificate English syllabus from 1999. In a preface to the syllabus, it is acknowledged that

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The remit of the specialist course committee for English, which was put in place by the NCCA, stressed that the new English syllabus should give priority to the study and acquisition of the language skills, both oral and written, that are needed for adult life. Specifically, the new syllabus should provide opportunities for the development of the higher-order thinking skills of analysis, inference, synthesis and evaluation...Consequently this syllabus, both in its structure and in its content, is a radical and original response to the stated remit. The study of thinking skills and language are emphasised throughout. Itemised lists of skills related to specific categories of language use are presented as the expected learning outcomes.

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The idea that the new syllabus styles itself as 'radical' and 'original' is striking.

### **Aspects of the technical form of this syllabus worth noting:**

The document consists of 21 pages. The structure is organised around two 'general domains': comprehending and composing. The course is laid out in the following sections:

- An introduction which, though not named as such, conforms to what is termed a 'rationale' in more recent specifications
- A note on the structure of the syllabus, which outlines how composing and comprehending are to be experienced in relation to five general headings under which language use may be classified, namely:
  - The language of information
  - The language of argument
  - The language of persuasion
  - The language of narration
  - The aesthetic use of language
- Aims for the syllabus, setting out what it intends to develop in students (including, for example, 'a mature and critical literacy to prepare them for the responsibilities and challenges of adult life in all contexts')
- A note on areas where students' development will be fostered, namely: Concepts and Processes, Knowledge and Content, Skills and Attitudes and Effects
- A short commentary note on the aims, stressing the importance of students developing understanding of the 'unique power' of language
- Learning outcomes for each of the five designated areas of language mentioned above, where students will be required to develop a range of named 'skills and competencies'
- A section on levels of provision and attainment, setting out arrangements for differentiation between higher and ordinary levels
- Course requirements, setting how texts are to be selected (texts are prescribed but there is considerable choice built in)
- Examination arrangements

It is notable that the syllabus places great emphasis on learning outcomes model, which would become more established in later years. The learning outcomes are explicitly linked with skills that students should acquire in relation to language use. The syllabus also provides a modernised and broad range of literature which teachers can draw upon to support students' engagement with the learning outcomes. The range of texts is updated regularly, with circulars informing schools of adjustments. The inclusion of women writers along with more a broader range of authors of different nationalities is notable. The structure allowed for a combination of prescribed elements and options, whereby students could select six poets to study from a list of eight, for example, with other parts of the syllabus also allowing for significant freedom in choosing suitable texts. The syllabus also sets out new examination arrangements and is accompanied by a set of teacher guidelines exemplifying a range of appropriate teaching and assessment approaches. Overall, the technical form, and the thinking underpinning it, was quite new and ground-breaking, and signalled the nature of changes to the technical form to follow.

## 2.5 An overview of relevant curriculum developments 2000 – 2010

The Department of Education’s *Rules and Programmes for Secondary Schools* for 2000/01 set out the nature of curriculum provision at senior cycle at the start of the new millennium. As noted previously, it is striking how little the format of the Rules and Programmes for Secondary Schools changed over the decades since it was first introduced. In 2000/01, it still adhered to the layout whereby rules and regulations governing subject provision and examination requirements were set out in one section, with the rest of the document dedicated to outlining subject syllabus arrangements. The nature of thinking on the technical form of curriculum for Leaving Certificate Established is reflected in a note on p.82. which advises that revised and new syllabus documents setting out detailed and specific arrangements are available for certain subjects. These subjects are:

- **Mathematics (Higher and Ordinary):** revised syllabus in place for 1994 examination and afterwards
- **Gaeilge:** new syllabus for Foundation Level in place for 1996 examination and afterwards
- **French, German, Italian, Spanish** and **Accounting (Higher and Ordinary):** revised syllabuses in place for 1997 examination and afterwards
- **Mathematics:** new syllabus for **Foundation Level** in place for 1997 and afterwards
- **Music** and **Business (Higher and Ordinary):** revised syllabuses in place for 1999 examination and afterwards
- **English: (Higher and Ordinary):** revised syllabus to be introduced in 1999 and examined in 2001 and afterwards.

The note also indicates that revised syllabi at **Higher and Ordinary** level for **Chemistry** and for **Physics** will be introduced in 2000 for examination in 2002 and afterwards. For all other subjects, their syllabi were included in a single volume of the Rules and Programmes. The table below sets out the page(s) on which the syllabus for each subject is included in the Rules and Programmes 2000/01. The average length of each syllabus is 4 pages with any additional prescribed material for examination included in the appendices. Table 12 below sets out these subjects as they are listed in the Rules and Programmes, with the number of pages allocated to detailing arrangements for each subject.

<b>1.</b> Latin pp. 84-85	<b>13.</b> Construction Studies pp. 162-169
<b>2.</b> Greek pp. 86-87	<b>14.</b> Agricultural Science pp. 170-174
<b>3.</b> Classical Studies pp. 88-92	<b>15.</b> Agricultural Economics pp. 175-176
<b>4.</b> Hebrew Studies pp.93-95	<b>16.</b> Home Economics (Scientific and Social) pp. 177-182
<b>5.</b> Computer Studies Option p.96	<b>17.</b> Home Economics (General) pp. 183-189
<b>6.</b> Physics (for examination in 2001 only) pp. 97-111	<b>18.</b> Economics pp. 190-192
<b>7.</b> Chemistry (for examination in 2001 only) pp. 112-127	<b>19.</b> Economic History pp.193-197
<b>8.</b> Physics and Chemistry pp. 128-131	<b>20.</b> History pp. 198-199
<b>9.</b> Biology pp. 132-147	<b>21.</b> Geography pp. 200-207
<b>10.</b> Applied Mathematics pp. 148-149	<b>22.</b> Art (including Crafts) pp. 208-211

**11.** Engineering pp. 150-155

**23.** Syllabus in Physical Education pp. 212-224

**12.** Technical Drawing pp. 156-161

**Table 16:** Rules and Programme for Schools 2000/2001 pages allocated per subject

**Aspects of the Rules and Programme for Schools worth noting:**

The number of pages allocated to each subject varies. In some instances, the subject syllabus consists of little more than a page of guidance. Each subject sets out its curriculum and assessment arrangements in its own distinctive fashion, reflecting the fact that there is no single template for the technical form of subject syllabi. Essentially, the details set out relate to prescribed disciplinary content and related assessment arrangements. This could be interpreted as reflecting a high degree of trust in teachers' professional judgement and expertise in shaping an appropriate curricular experience of their subject(s) for their students. Conversely, it could also be interpreted as reflecting a narrow view of the purpose of education and what it means to be educated, namely the transmission of, engagement with and assessment of subject disciplinary knowledge.

Table 13 below shows the subjects redeveloped in the first decade of the 2000s.

Chemistry	2000
Physics	2000
Link Modules	2001
Russian	2001
Arabic	2002
Biology	2002
Japanese	2002
Home Economics	2002
Religious Education	2003
Geography	2004
History	2004
DCG	2007
Technology	2007
Gaeilge	2010

**Table 17:** Subjects redeveloped between 2000 and 2010

It is worth considering some examples in more detail to gain a flavour of the changes.

**Technical form: Leaving Certificate Physics (2000)**

Evolution of the technical form of Leaving Certificate syllabi is also evident in the Leaving Certificate Physics syllabus. A preamble situates the subject within the broader discipline of Science, which states that the syllabus

should reflect the changing needs of students and the growing significance of science for strategic development in Ireland.

and is designed to incorporate three distinct components

- science for the enquiring mind, or pure science, to include the principles, procedures and concepts of the subject as well as its cultural and historical aspects
- science for action, or the applications of science and its interface with technology
- science, which is concerned with issues – political, social and economic – of concern to citizens.

### Aspects of the technical form of this syllabus worth noting:

A specified weighting for each of the three components

Aims for the syllabus, setting out what it intends to develop in students (including, for example, 'the ability to observe, to think logically, and to communicate effectively')

A page on the structure of the syllabus which outlines how the content from the three components, the pedagogical approach and the relevant context is organised in 4 columns:

- content
- depth of treatment
- activities
- science, technology, and society (STS).

MECHANICS			
Content	Depth of Treatment	Activities	STS
<b>MOTION</b>			
<b>1. Linear motion</b>	Units of mass, length and time – definition of units not required.  Displacement, velocity, acceleration: definitions and units.  Equations of motion.	Measurement of velocity and acceleration, using any suitable apparatus. Use of distance-time, velocity-time graphs.  Measurement of <i>g</i> . Appropriate calculations.	Sports, e.g. athletics.
<b>2. Vectors and Scalars</b>	Distinction between vector and scalar quantities.		Vector nature of physical quantities: everyday examples.

A paragraph on

- practical work
- differentiation between Ordinary and Higher level

- Assessment Objectives

The syllabus also provides information on the mathematical requirements, symbols and formulae at both levels and is accompanied by a set of teacher guidelines exemplifying a range of appropriate teaching and assessment approaches.

## Technical form: Leaving Certificate Religious Education (2003)

The Religious Education (RE) syllabus from 2003 is noteworthy due to its unique structure, and indeed length, amounting to 104 pages – by any standards a significant development from practice over previous decades. The syllabus sets out an ‘educational rationale’ for RE in the curriculum. It argues that ‘religious education can justly claim an integral part of any curriculum which aims to promote the holistic development of the individual in the light of the stated aim of education’. It references ‘knowledge, understanding, skills, and attitudes’ and the potential benefit to society as well as to individuals of engaging with the syllabus, much of which is consistent with the purpose of a redeveloped senior cycle. A rationale, aims, and consideration of progression from junior cycle are all part of the technical form of this specification. Two such aims include: ‘to foster an awareness that the human search for meaning is common to all peoples of all ages and at all times’ and ‘to explore how this search for meaning has found, and continues to find, expression in religion’. What is striking about this syllabus compared to previous syllabi is the way it combines compulsory and optional elements. This approach could arguably make the work of a development group less difficult, as rather than selecting topics and knowledge for 180 hours of class contact time, and jettisoning all else, multiple possibilities for learning within the subject can be highlighted and teachers and students can gravitate towards those which align with their needs, interests, aptitudes and/or preferences and expertise. However, this approach would also have implications for curricular coherence and for assessment that would need to be considered in the context of the subject in question.

The syllabus is then set out in three units as follows:

### **UNIT ONE SECTION A**

The search for meaning and values

### **UNIT TWO**

Any two of:

SECTION B Christianity: origins and contemporary expressions

SECTION C World religions

SECTION D Moral decision-making

### **UNIT THREE**

Any one of the following (excluding two sections designated for coursework).

SECTION E Religion and gender

SECTION F Issues of justice and peace

SECTION G Worship, prayer, and ritual

SECTION H The Bible: literature and sacred text

SECTION I Religion: the Irish experience

SECTION J Religion and science

Each one of these units is then in turn organised in relation to:

- Aims: The aims at the start of each section set out the broad purpose of that section and show how the section is related to the overall aims of the syllabus.
- A number of sub-sections, each of which contains:
  - **Objectives:** Building on the aims of the whole section, the objectives give an indication of the direction from which the content should be approached.
  - **Topics:** These sections present the areas of study, and are accompanied by ‘a description of content’.
  - **Learning outcomes:** These indicate the expected depth and breadth of engagement with the topics.

An example of a sub-section of a topic is given here:

Unit One, Section A: The search for meaning and values		
The quest for meaning		
Topic	Description of content	Learning outcomes
<p><b>1.1</b> The contemporary context</p>	<ul style="list-style-type: none"> <li>• contemporary expressions of the search for meaning</li> <li>• key questions concerning the goal and purpose of life, the meaning of good and evil, and the experience of suffering</li> <li>• expressions of these questions in contemporary culture and in the experience of the student</li> <li>• factors which block the search for meaning and values</li> <li>• contemporary expressions of the phenomenon of indifference to any search for meaning.</li> </ul>	<p>As a result of studying this section, students should be able to</p> <ul style="list-style-type: none"> <li>• give two examples from contemporary culture that illustrate the human search for meaning. Examples may be taken from music, art, literature, or youth culture</li> <li>• provide two examples of each of the following key questions that emerge in contemporary culture: the goal and purpose of life; the meaning of good and evil; the experience of suffering</li> <li>• identify cultural factors in contemporary society that can block the search for meaning</li> <li>• give two examples of the contemporary phenomenon of indifference to the search for meaning.</li> </ul>

**Table 18:** Topic sub section, Religious Education Specification, 2003

**Aspects of the technical form of this syllabus worth noting:**

- The course is very vast and comprehensive in its coverage. It is therefore structured so that while all students must engage with Unit One, there is considerable choice and flexibility in what students engage with thereafter.
- There is a strong focus throughout on integrating objectives, focused on knowledge, skills, values, and attitudes, with what might be termed course content,

- There is a practice whereby learning outcomes are set out but are aligned with a description of content. It is clear that while learning outcomes are invoked here, the manner in which they are used over subsequent years changed somewhat, with less focus on the articulation of content and more on the flexibility inherent in the learning outcomes themselves.

## Technical form: Leaving Certificate History (2004)

The Leaving Certificate history syllabus is useful to consider as a further example of a subject that was redeveloped in the early 2000s. It replaced a 1969 syllabus which was first examined in 1971. Comparing changes in the technical form of the two syllabi gives us a useful insight into the thinking that informed curricular changes more generally in the early 2000s. The 1969 history syllabus was short on detail, offering a choice of two survey courses, one relating to early history and one to the modern period. It contained no references to historical methods or to encouraging a critical outlook on the events of the past. The examination featured traditional essays and there were no source-based questions. The content was heavily political in focus, looking at aspects of the history of Ireland and Europe, with little or no opportunities to explore the history of the wider world. It was also very short in length, given its very general nature – less than 2 pages.

The revised syllabus was introduced in 2004 and examined for the first time in 2006. It was designed by a course committee and differed in several important ways from the syllabus it replaced. Some of the main differences are as follows:

- The newer syllabus document is more substantial, with greater detail on the parameters of study, underlying purposes, and arrangements for assessment. Whereas the previous syllabus consisted of less than 2 pages, the revised syllabus is some 50 pages long.
- Instead of a choice between two survey courses as in the previous syllabus, there is a choice between two 'fields of study' - Early Modern, 1490s to 1815, and Later Modern, 1815 to the 1990s - with one prescribed topic and three other topics to be chosen from a range of options. The options include many topics not previously studied at this level, such as the Irish diaspora during the post-Famine century of high emigration and the United States in the decades following World War II.
- All topics have a range of 'perspectives' to be explored: typically, these are Politics and Administration, Society and Economy, Culture and Religion (and, in many cases, Science). According to the Guidelines for Teachers (2004), the intended purpose is '... to ensure a balanced coverage of past events and the people who participated in them' (p.8). There was a deliberate attempt to move away from a strictly political focus, and to allow for wider perspectives through which to examine the past.
- The syllabus objectives contain a direction that, "In studying human activity in the past, attention should be given to the experiences of women", (p.3) This emphasis was new and reflected developments in historiography as well as societal concerns around gender inequalities.
- A key difference was a focus on the practice of history and the provision of opportunities for students to 'do' history as well as learn history.

### Aspects of the technical form of this syllabus worth noting:

There are certain features of the technical form that align with RE, as described above. The syllabus sets out aims and objectives. The aims and objectives are set out in relation to common

themes, namely, knowledge and understanding, skills of history and preparation for life and citizenship. Choice is key feature of the syllabus. Interestingly, a rationale for the study of the subject is offered, though the term ‘rationale’ is not used. Instead, in a ‘preface’, the ‘nature of history’ is set out, detailing its importance and relevance, followed by an overview of the ‘nature of the syllabus’.

- While there are twelve topics set out for study, students only study four as part of their course, two from Irish history and two from the history of Europe and the wider world.
- Each topic is structured in a similar fashion. Events, issues and themes are arranged as *elements*, which are set out in relation to various *perspectives*. The elements are intended to be studied in breadth, with one aspect of the elements selected for more in-depth treatment, in the form of a *case study*.
- A list of key personalities and key concepts are specified for each topic. These lists provide guidance on what personalities and concepts students should encounter as they engage with the elements and case studies.

### Later Modern Ireland (Field of Study)

#### Topic 5: Politics and Society in Northern Ireland, 1949-1993

Perspective	Elements	Case studies
Politics and administration	From Brookeborough to O’Neill; the Civil Rights movement; emergence of the Provisional IRA; the fall of Stormont; Direct Rule; Republican and Loyalist terrorism; Sunningdale and power-sharing; the Anglo-Irish Agreement, 1985. The Republic – responses to the “Troubles”. The Downing Street Declaration, 1993.	The Sunningdale Agreement and the power-sharing executive, 1973-1974
Society and economy	Impact of Welfare State: education, health, housing. Social and economic developments prior to 1969. Impact of the “Troubles”: (a) the economy; (b) society – education, health, housing.	The Coleraine University controversy
Culture and religion	Religious affiliation and cultural identity; ecumenism; cultural responses to the “Troubles”.	The Apprentice Boys of Derry

In their study of the topic, students should become aware of the role of certain key personalities. Another “key” to developing understanding will be learning to identify the main issues through a familiarity with certain key concepts.

#### Key personalities

Students should be aware of the contribution of the following to the developments listed under the elements above:

Terence O’Neill; Conn and Patricia McCluskey; Bernadette Devlin; Ian Paisley; Brian Faulkner; John Hume; James Molyneaux; Margaret Thatcher; Gerry Adams; Seamus Heaney.

#### Key concepts

Civil Rights; gerrymandering; terrorism; power sharing; sectarianism; bigotry; tolerance and intolerance; cultural traditions; cultural identity; ecumenism; propaganda.

**Table 19:** Topic 5, Leaving Certificate History, 2004



The topic format as illustrated above represented an attempt to reconcile breadth and depth of coverage but will be noted as detailed in terms of what events, issues, themes and people should be studied. The extent of detail is markedly different from the old syllabus, although a considerable degree of choice is available when choosing topics, if not within the topics themselves.

The key point of note is the detailed description of historical events, issues, people and themes for study, when one considers how scant the detail was in the older syllabus, and how very general in nature the advice was. Another noteworthy point is the increased emphasis on the skills of the historian and the nature of the subject as a discipline, including the strong focus on critically interrogating documents and making enquiries based on evidence, as distinct from accepting preordained narratives of the past. This focus on skills and dispositions is interesting.

The syllabus also saw the introduction of a pre-submitted assessment component, whereby students completed a research study on a theme of their own choosing, within certain broad parameters, and completed a report on it, worth 20% of the overall grade. A further feature of revised assessment arrangements was that in the terminal exam, where students had to write five essay type answers previously, they now did three, as well as a documents-based question focusing on students' skills in interrogating and contextualising historical documents. It should be noted that the Leaving Certificate geography syllabus was redeveloped at the same time as the history one, with similar emphases to history evident in terms of the difference between the old and redeveloped syllabi.

2009 was a busy year for NCCA in terms of publications, perhaps reflecting a sense of urgency in terms of the need for reform at the time. A paper *Leading and Supporting Change in Schools* (NCCA, 2009) was published which stressed the need for schools to have greater autonomy in realising change at local level, as well as involving teachers more explicitly in planning for change as well as implementing it. The report also emphasised the role of teachers as curriculum developers and put forward a learning outcomes approach to curriculum design. In the same year, the NCCA published *Towards Learning: An Overview of Senior Cycle Education* (NCCA, 2009), which urged reform of existing processes. Also of particular relevance to senior cycle curriculum design, was the publication of the Senior Cycle Key Skills Framework (2009).

## Senior Cycle Key Skills Framework (2009)

This framework highlighted the importance of students being able to think critically and creatively, being innovative, being able to work independently and as part of a team and being reflective, qualities which the document stressed were 'prerequisites for life and for the workplace in the 21st century'. Influenced by the Lisbon Strategy and by the OECD initiative DeSeCo - 'Defining and Selecting key Competencies', the framework identified five key skills as 'central to teaching and learning across the senior cycle curriculum'. These skills were:

- Information processing
- Being personally effective
- Communicating
- Critical and creative thinking
- Working with others

The document linked these skills with proficiency in literacy and numeracy, which were key priorities of the Department of Education. It elaborated on these skills by delineating associated elements and learning outcomes for each one. The document further clarified that as each new subject, short course or transition unit was developed in senior cycle, the key skills would be embedded in the learning outcomes, which would in turn provide a basis for assessment as part of ongoing learning and in examinations. An example of an element and related learning outcomes is given here, relating to the key skill of 'information processing':

**Key skill:** Information processing

**Element:** Accessing information from a range of sources

**Learning outcomes:** Students should be able to:

- recognise the wide range of information sources that is available both within their schools, at home and beyond
- access information quickly in written materials by strategies such as using table of contents, glossaries, summaries at the end of chapters and so on
- use library catalogues and referencing systems to find books and other materials
- access new information quickly through using dictionaries, reference materials and the internet
- navigate the internet to find specialist sites related to a topic they are studying
- use people as well as hardcopy/electronic sources as sources of information

**Table 20:** Senior Cycle Key Skills Framework (2009) example of element and learning outcomes

The proposed alignment of the technical form of all subjects with a broad range of key skills was a notable development at this time.

## 2.6 An overview of relevant curriculum developments 2010 – 2021

Two years later, in 2011, the National Strategy for Literacy and Numeracy (DES, 2011) made an explicit policy commitment to learning outcomes, advising that:

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a “learning outcomes” approach [is] to be incorporated into all curriculum statements at primary level and in all new syllabuses at post-primary levels as they come on stream. Curricula should state clearly the skills and competences expected of learners... (p.45).

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NCCA had moved to a learning outcomes-based approach to curriculum design, particularly in its post primary work, well before 2011. As seen in the review of syllabus documents in preceding years, the term was used, though not perhaps grounded in the research that underpinned their use in later years. A learning outcomes and skills/competencies model would become a significant feature of curriculum design internationally as well as across all phases of learning in Ireland. As defined in the European qualifications framework, learning outcomes are statements of what a learner knows, understands and is able to do on completion of a learning process (European Commission, 2006). The definition accommodates a range of interpretations so that Member States may adapt the approach to the specific contexts of their education systems as well as to different subsystems (Looney, Janet, NCCA, 2016).

Learning outcomes as a means of articulating curriculum first emerged in the 19th and early 20th centuries through the work of Ivan Pavlov (1849-1936) and subsequently the American 'behavioural school' of psychological thought, as enunciated chiefly by JB Watson (1878-1958) and BF Skinner (1904-1990). Behaviourism emphasised the clear identification and measurement of learning and the need to produce observable and measurable outcomes. The 'learning outcomes approach' gained traction in Australia, New Zealand, South Africa, and the United Kingdom initially, and latterly in Denmark, Sweden, Ireland and other parts of Europe. The emphasis on learning outcomes has evolved to encompass all subject areas and has moved from school and vocational education and training (VET) fields through to higher education.

The approach was promoted in particular as it emerged from the so-called 'Bologna Process'. This process relates to the work of the European Higher Education Area (EHEA), of which Ireland is a member. At a meeting in Bologna in 1999, various European countries committed to working towards a Europe-wide system of comparable degrees and transferable course credits, the mutual recognition of qualifications, more mobility, greater co-operation in quality assurance, and linking teaching and research more explicitly to the ideas behind the European Union. These aspirations were put forth in the Bologna Declaration (1999). One important feature of these new developments would be the use of learning outcomes, which was affirmed in the Berlin Communique of 2003. Learning outcomes were advocated as they are associated with student-centred learning and are considered to support a shift of focus from an input-based, teacher-centred education provision to outcome-based, student-centred learning and teaching. However, given the significant differences between school learning and higher education, with the focus of schooling on the holistic development of children and young people before they reach adulthood, learning outcomes in schooling arguably need to be more flexible than the learning outcomes created in higher education for use with adults.

The National Literacy and Numeracy Strategy gave the learning outcomes approach a further impetus and they can be seen as integral to senior cycle specification development from 2011. This period heralded the first moves towards a common template at senior cycle, or more specifically in Leaving Certificate Established subject specifications and Frameworks. This was seen in the Social Personal Health Education Framework, introduced in 2011, with a mathematics specification following in 2013. New or redeveloped Leaving Certificate subjects or curriculum areas that have been introduced since 2011 incorporated learning outcomes and were designed to a common template and structure. Their technical form was similar but retained the flexibility to allow for subject differences to be taken on board, where a solid rationale for doing so was agreed upon. These subjects or curriculum areas include:

SPHE Framework	2011
Mathematics	2013
PE Framework	2016
Politics and Society	2016
Ag Science	2018
Computer Science	2018
Physical Education	2018
Economics	2019

Lithuanian	2020
Mandarin Chinese	2020
Polish	2020
Portuguese	2020
Applied Maths	2021
Art	2021
Classical Studies	2021

**Table 21:** subjects redeveloped between 2011 and 2021

## Technical form: Leaving Certificate Social, Personal, Health Education Framework (2011)

The significance of the SPHE framework is that it was the first to set out a template which was retained subsequently, indicating a move towards curricular coherence or alignment in the presentation of the technical form of Leaving Certificate curriculum documents. The SPHE framework contains:

- **An overview of the Senior cycle experience**, including a vision for what senior cycle learners should be, informed by values and principles
- **An overview of the curriculum area [of SPHE]** including Introduction and rationale; Supportive whole-school environment; The role of parents/guardians; Related learning; Aim and objectives.
- **The curriculum framework structure**, including Course overview; Time allocation; Planning for teaching and learning; Perspectives [in SPHE]; Assessment; Differentiation; Key skills; Effective learning.
- **Areas of learning**, in the case of SPHE, set out in relation to five headings. For each area of learning, there is a 'Students learn about ...' column which sets out some sub-themes relating to the area. In the adjacent column, entitled 'Students should be able to...', there is a suite of learning outcomes relating to each of the sub themes, setting out what students should be able to know, understand and/or be able to do.
- **Assessment**, including Assessment for learning and Assessment of learning

## Technical form: Leaving Certificate Mathematics (2013)

Tellingly, the headings used in Mathematics were broadly in line with the SPHE template from 2011. These headings were:

- Introduction and rationale
- Aim
- Objectives
- Related learning
- Syllabus overview
- Structure
- Key skills
- Problem solving (specifically related to maths)
- Teaching and learning

- Differentiation
- Strands of study ('strand' replaces 'area' and indicates the overarching themes of the subject under which learning outcomes are arranged)
- Assessment

In the structure section, learning outcomes are set out in relation to topics, which are subsections of strands. The example below is from Strand 1: Statistics and Probability in the Foundation level course. Note that the learning outcomes are arranged as what students should be able to do, positioned next to a column setting out what students learn about. (It might be noted that the Maths syllabus is 96 pages long compared to 27 for the SPHE document. This is because Section 2 of the Maths document reproduces the geometry course for Junior Certificate, recognising that Leaving Certificate geometry builds on learning in junior cycle.)

Topic	Students learn about	Students should be able to
<b>1.7</b> Analysing, interpreting and drawing conclusions from data	Drawing conclusions from data; limitations of conclusions	<ul style="list-style-type: none"> <li>– interpret graphical summaries of data</li> <li>– relate the interpretation to the original question</li> <li>– recognise how sampling variability influences the use of sample information to make statements about the population</li> <li>– use appropriate tools to describe variability, drawing inferences about the population from the sample</li> <li>– interpret the analysis</li> <li>– relate the interpretation to the original question</li> </ul>

The SPHE Framework and Maths specification are indicative of the emergence of a common template, consisting of key features of a technical form that demonstrate coherence across subjects within a programme of learning. For the other specifications listed above that have been redeveloped or issued as new subjects, the main aspects of the template are in alignment across these subjects. Chapter 3 will offer further detail on the most recent iterations of the technical form of curriculum specifications.

## 2.7 Chapter Summary

This chapter traces the evolution of the technical form of curriculum, via rules and programmes, syllabi and specifications at senior cycle, over several decades. It notes the significance over many years of the Department of Education's *Rules and Programmes for Secondary Schools*, which served, in essence, as a curriculum document for the Leaving Certificate programme, setting out syllabus and assessment arrangements for each subject. In the early years of the state, curriculum syllabi were extremely short, averaging 4 pages, and consisted of little more than broad indicators of subject content and information about final examinations. The Rules and Programme for Schools document was the main reference point for curriculum information, a situation that changed very little between the 1920s and the 1960s.

The emergence of the Curriculum and Examinations Board and latterly the National Council for Curriculum and Assessment in the 1980s was important in promoting thinking about the technical form of curriculum, and moving beyond a conceptualisation of curriculum as a delineation of what might be termed substantive subject knowledge or content. In the 1980s, curriculum became a more prominent field of study, and curriculum documents became more sophisticated, with rationale, aims and objectives for subjects enunciated in more detail, and the articulation of outcomes for students also becoming increasingly evident.

More substantial and sophisticated syllabus documents were published in the 1990s and into the early 2000s. Syllabus arrangements for redeveloped subjects were issued as discrete syllabus documents and were framed as more than the delineation of subject content, supported also by teaching guidelines that offered guidance in pedagogical and assessment approaches. The range of subjects on offer in schools expanded and different programmes emerged which were reflective of broader societal changes. More sophisticated approaches to the technical form of curriculum syllabi/specifications emerged over time, influenced to some extent by thinking from Europe and other jurisdictions. The enhanced articulation of aims, objectives and a rationale for studying a subject are evident, with an increased focus on learning outcomes observed in developments over this period. The broader framework of key skills across senior cycle also informed developments. Variation in the technical form to support the Leaving Certificate Vocational Programme and the Leaving Certificate Applied is also evident. Developments in assessment included greater variation in modes of assessment that, in many but not all subjects, move beyond a terminal examination model.

Finally, the chapter explores the emergence of a common technical form and template across senior cycle after 2010 and notes the impact of this template in supporting increased curriculum coherence and resonances across subjects and curriculum components. It also acknowledges the origins and significance of the learning outcomes model as a means of articulating what students should know, understand or be able to do following their study of a subject or module, framed within the broader learning goals of the programme with which they are engaged. This brief survey of developments from an historical perspective provides a useful context for considering the technical form of curriculum syllabi/specifications from other perspectives in the following chapters of this paper, and in moving towards the identification of an appropriate template for use in the redevelopment of senior cycle.

## 3. National and international approaches to the technical form of curriculum specification design

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### 3.1 Aims of this chapter

This chapter looks at the technical form of curriculum syllabus/specification design nationally and in a range of jurisdictions internationally. It outlines the main sections within curriculum syllabi or specifications (for clarity, henceforth referred to as curriculum specifications) and compares their approaches to the Irish context, using curriculum specifications that were designed using the technical form outlined towards the end of chapter 2. It builds on prior research conducted by NCCA, in particular the Upper Secondary Education in Nine Jurisdictions: Overview Report (O'Donnell S, 2018) and seeks to establish

- if there is a 'best practice' internationally in designing the technical form of a curriculum
- what supports are put in place, alongside curriculum specifications, to aid clarity and coherence for teachers as they introduce new or revised specifications in schools.

It is recognised that curriculum specification development has been an ongoing process since the foundation of the Irish state and that our curriculum is a reflection of our national character, priorities and values and of our historical, social and cultural context. Similarly, the various jurisdictions referred to in this paper have developed within – and cannot be separated from – the very specific historical and cultural contexts in which they have evolved. It falls outside the scope of this research to situate the jurisdictions studied within their specific historical, social and cultural context. Comparisons with the Irish context are therefore made while also recognising the limitations of same.

For this chapter, a review of curriculum specifications at upper secondary level was undertaken in the following jurisdictions: New Zealand; Ontario (Canada); Queensland (Australia); Scotland and Wales. These jurisdictions were selected for review for a variety of reasons, including some or all of the following:

- they illustrate a range of approaches toward designing the technical form of the curriculum
- due to common membership of international networks, such as the Consortium of Institutions for Development and Research in Education in Europe (CIDREE) and the International Educational Assessment Network (IEAN), which facilitated NCCA access to detailed information about their curriculum design processes.
- they were included in the senior cycle review report on Upper Secondary Education in Nine Jurisdictions (NCCA, 2018).
- their documents are available in English.

For the purposes of this paper, the documents referred to will be Leaving Certificate Established (LCE) curriculum specifications, as the first phase of senior cycle specification redevelopment focuses on LCE subject (re)development. In addition, two of the four recently revised LCA module descriptors are included for discussion, as many of the international jurisdictions explored below also offer modules in senior cycle. As the technical form of Transition Year modules and units and LCVP modules have not recently been updated, these are not included for discussion below.

## 3.2 Overview of chosen jurisdictions

In **Ontario, Canada** secondary education is provided for students aged 14-18 (Grades 9-12) of which grades 11 to 12 are considered to be the senior/upper secondary years. Ontario Schools Kindergarten to Grade 12: Policy and Program Requirements (2016) states that the purpose of secondary education is

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'to provide all students with the fundamental knowledge and skills they will need in any area of endeavour as well as the opportunity to specialize in and / or explore areas related to their postsecondary goals and personal interests.

This program keeps options open for students in the earlier grades and prepares them in senior grades for their postsecondary destinations, including apprenticeship training, college, community living, university, or the workplace' (Ontario Ministry of Education, 2016a, page 70).

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Most students in Ontario follow a credit-based programme leading to the Ontario Secondary School Diploma (OSSD). Students usually complete high school and their OSSD in four years, though some students take a fifth year or an additional semester. Extending their studies allows them to take fewer credit courses towards their OSSD each year which can help them to achieve high school graduation and allow the flexibility / time to explore their interests in other school subjects. In the upper secondary phase for 16- to 18-year-olds, five types of courses are offered to students including University, College, Apprenticeship and Workplace preparation courses. This is very different to Ireland where 95% of students follow one course (Leaving Certificate Established), as laid out in the relevant curriculum syllabi/specifications and are assessed at one of two levels (Ordinary and Higher).

Open courses are also available in Ontario, which comprise expectations appropriate for all students, designed to broaden students' knowledge and skills in subjects that reflect their interests, and prepare them for participation in society. Assessment in Ontario consists of credits which are awarded following the successful completion of externally set, internally assessed courses; the majority of which is done throughout the course with a final course assessment which may be an examination.



In **Queensland, Australia**, the Advancing Education action plan (Queensland Government, Department of Education and Training 2017a) outlines that the aims and purpose of education is to

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'inspire students to become lifelong learners, global citizens and successful people, confidently able to navigate their future, building on the essentials of literacy and numeracy',

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and to

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'position schools to more effectively support students to develop the knowledge, skills and qualities they need to be job-ready for the jobs of the future'.

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In terms of senior secondary schooling (for 15/16- to 18-year-olds), Advancing Education has a focus on strengthening the pathways available to students and continuing to expand the number of vocational education and training (VET) options in schools. This is with a view to ensuring that every Queensland state school student has the opportunity to complete Year 12 (age 18) and, where possible, achieve the Queensland Certificate of Education (QCE) as the stepping stone to enhanced employment prospects and future opportunities.

Students aged 16 years and older (Years 11 and 12) work towards the Queensland Certificate of Education (QCE) which records learning and achievement to a set standard, using a credit-based system. The Certificate recognises broad learning options and offers flexibility in what, where and when learning occurs. Queensland offers a number of pathways, including Vocational Education Training (VET) and the Queensland Certificate of Individual Achievement (QCIA), which are discussed later in this chapter. Assessment in Queensland has recently changed and now consists of a combination of internal and external assessment.

In **New Zealand**, the New Zealand Curriculum (2015) and the parallel document, Te Marautanga o Aotearoa, start with visions of young people who will develop the competencies they need for study, work, and lifelong learning and go on to realise their potential. Furthermore, it states that the vision is to develop young people

- who will be creative, energetic, and enterprising;
- who will seize the opportunities offered by new knowledge and technologies to secure a sustainable social, cultural, economic, and environmental future for our country;
- who will work to create an Aotearoa New Zealand in which Māori and Pākehā recognise each other as full Treaty partners, and in which all cultures are valued for the contributions they bring;
- who, in their school years, will continue to develop the values, knowledge, and competencies that will enable them to live full and satisfying lives;
- who will be confident, connected, actively involved, and lifelong learners.

In their final year of compulsory education in New Zealand, 15 to 16yr olds complete a Level 1 National Certificate of Educational Achievement (NCEA), followed by a two-year senior cycle at NCEA Level 2 and Level 3 (Years 12 and 13). The NCEA is intended for all students, irrespective of whether they intend pursuing adult, further and higher education and training, apprenticeships,

traineeships and/or the world of work and requires an NCEA Level 3 qualification, achieved in three 'approved subjects' at NCEA Level 3, along with minimum literacy and numeracy requirements. New Zealand is more similar to Ireland than Ontario and Queensland, in the sense that there is one curriculum for all students, but it is very different in that curriculum development at subject level is devolved to schools and there is a long tradition of and preference for internal assessment in their teaching profession.

NCEA Vocational Pathways aligns learning to skills that are needed for industry and workforce and Secondary-Tertiary Programmes offer senior secondary students trade and technology programmes which encourage them to remain in education and acquire the knowledge and skills local communities need. These programmes are offered in Trade Academies. Similar to Queensland, schools in New Zealand have both internal and external assessment. It should be noted that New Zealand are undertaking a curriculum 'refresh' currently (2023).

In **Scotland**, the purpose of education is outlined in Curriculum for Excellence (2010). This purpose is encapsulated in the Four Capacities of Curriculum for Excellence- to enable each child or young person to be a successful learner, a confident individual, a responsible citizen and an effective contributor.

Scotland also has a credit-based system at upper secondary level. In the Scottish Credit Qualifications Framework (SCQF), pathways over a three-year period include National Qualifications, which would be the pathway most similar to the Leaving Certificate Established. National Qualifications are available at various levels; Level 4, Level 5, Level 6, Higher and Advanced Higher. Most students entering University do a mixture of Highers and Advanced Highers. Some also pick up subjects at a lower level for personal interest, to gain additional skills and/ or to expand their horizons. Other pathways in Scotland include the Scottish Vocational Qualifications at 5 different levels and the Scottish Baccalaureates. The Scottish Baccalaureate is available in specific learning areas and contains an Interdisciplinary Project which allows learners to develop and show evidence of initiative, responsibility, and independent working. Assessment in Scotland consists of a combination of internal and external assessments, depending on the course/ unit studied. For example, National qualifications 3 and 4 are teacher-assessed while National 5, Higher and Advanced Higher qualifications are externally assessed.

In the **Welsh** curriculum, Curriculum for Wales (2020), it states that there are four core purposes which are the shared vision and aspiration for every child and young person. As set out in this document, the aim of a school's curriculum is to support its learners to become:

- ambitious, capable learners, ready to learn throughout their lives
- enterprising, creative contributors, ready to play a full part in life and work
- ethical, informed citizens of Wales and the world
- healthy, confident individuals, ready to lead fulfilling lives as valued members of society

In Wales, the General Certificate in Education (GCE) at Advanced Subsidiary and/or Advanced Level are usually taken by students at age 16 – 19. AS levels are similar to the first year of an A Level course. A-levels are more advanced and take longer to complete. Typically, students do three AS or A Level qualifications, which can be used as a basis for admission to higher education. For A-level students who wish to study in Ireland, one A Level is counted as two Leaving Certificate subjects by the Central Admissions Office (CAO). Students in Wales can also choose to do the Welsh Baccalaureate (Welsh Bac). Intended for students aged 14 to 19, it is available at

three levels; Foundation, National and Advanced. A student is awarded the Welsh Baccaulaureate by achieving a specified combination of qualifications, at the heart of which is the Skills Challenge Certificate. Similar to Queensland and New Zealand, assessment in Wales consists of a combination of internal and external assessment.

### 3.3 Influence of overarching frameworks

In Ireland, there is currently no single framework document for Senior Cycle comparable to, for example, the Primary Curriculum Framework (NCCA, 2023) or the Framework for Junior Cycle (2015). Instead, Leaving Certificate Established subject specifications and the four recently revised module descriptors for the Leaving Certificate Applied (LCA) programme are aligned with the values, vision and principles of Senior Cycle education, as outlined in *Toward Learning, An Overview of Senior Cycle Education* (NCCA, 2009). These will ultimately be superseded by the purpose, vision and guiding principles of a redeveloped senior cycle, as outlined in the Senior Cycle Review Advisory Report (NCCA, 2022). The Leaving Certificate Applied Programme Statement, the Leaving Certificate Vocational Programme (LCVP) link modules and the original Transition Year Programme Guidelines/units were created prior to the publication of *Toward Learning An Overview of Senior Cycle Education* (NCCA, 2009) and as such are not explicitly aligned with the values, vision and principles of Senior Cycle education.

**Ontario, Canada** also has no overarching framework informing the various subjects or areas of learning. A document entitled Ontario Schools Kindergarten to Grade 12: Policy and Program Requirements (Ontario Ministry of Education, 2016a) provides the broad range of policies and programmes that govern education for students in schools in Ontario. *Stepping Stones, A Resource on Youth Development* (2012) also provides a strategic framework for people aged 12 to 25 in Ontario. It seeks to guide the development and delivery of services and supports, including education institutions, for youth across Ontario. *Stepping Stones* contains development maps for adolescence and early adulthood and uses a model to illustrate the complexity of human development, with domains - cognitive, emotional, physical, and social - which are interrelated and interdependent. This model is replicated in recent curriculum documents from Ontario and is used to inform their development, in much the same way as the vision, principles and key skills of Senior Cycle underpin Irish curriculum specifications.

**In Queensland, Australia** there is also no framework for senior cycle education. However, the Foundation to Year 10 Australian Curriculum, developed by the Australian equivalent of the NCCA, the Australian Curriculum, Assessment and Reporting Authority (ACARA) - is for use in all Australian states and territories. While upper secondary education is from Year 11 to 12, it states in specifications at this level that "All learning areas in Queensland curriculum specifications build on the Australian Curriculum." In Queensland, as in Ireland, individual curriculum specifications are provided for each subject and are designed according to a common template, as discussed later in this chapter.

In other jurisdictions, such as **New Zealand** and **Scotland**, there are no individual subject specifications. Instead, there is a less prescriptive approach to curriculum design where autonomy is given to schools to design their own curriculum, using the principles from their respective frameworks. The *New Zealand Curriculum* is the common curriculum framework which sets the

direction for student learning from year 1 to 13 and provides guidance for schools as they design and review their own subject-specific curriculum.

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The New Zealand Curriculum... is a framework rather than a detailed plan and means that while every school curriculum must be clearly aligned with the intent of this document, schools have considerable flexibility when determining the detail... Schools are required to base their curriculum on the principles of *The New Zealand Curriculum*, to encourage and model the values, and to develop the key competencies at all year levels.

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A single 67-page overarching document, this framework is a statement of official policy relating to teaching and learning in English-medium New Zealand schools. It outlines eight learning areas including English, The Arts, Social Sciences, Technology, Mathematics and Statistics etc. A parallel document, Te Marautanga o Aotearoa, serves the same function for Māori-medium schools. For each subject and level, an outline of the learning area structure and achievement aims/ objectives is provided separately on the Ministry of Education website.

In **Scotland**, there is also no compulsory prescriptive upper secondary curriculum, per se. Instead, a framework has been developed, Curriculum for Excellence (CfE, 2010)) which underpins the education system and aims to meet the needs of all learners aged 3 to 18 to gain the knowledge, skills and attributes needed for life in the 21st century. At lower secondary, Experiences and Outcomes, known as the Es and Os, are considered to be the building blocks of the entire curriculum. While they are intended for lower secondary, they are expected to inform all learning in Scottish classrooms. Unlike the other jurisdictions discussed here, it is the Scottish Qualifications Authority (SQA) and not Education Scotland who publish what are known as “Course specifications” at Upper Secondary Level. The length of specifications varies greatly, depending on the subject concerned. These contain information for teachers and lecturers who teach the course, describe the structure of the course (e.g. the aims and rationale) and contain assessment information. Some specifications, such as the Higher Course in Chemistry (version 3, 2018-2019), also contain an extensive list of mandatory knowledge and associated suggested learning and teaching activities while other specifications, such as History contain sample questions and marking instructions.

In the case of **Wales**, while there is no framework for upper secondary education, there are individual curriculum specifications for each GCE AS and A-level qualification. Similar to Scotland, the main body entrusted with education (Education Wales) does not develop the specification. Instead, an independent body, the Welsh Joint Education Committee (WJEC), writes the AS/A-Level curriculum specifications for most upper secondary subjects. In addition, WJEC are the main qualification provider for state-funded schools and colleges across Wales. Compared to the specifications developed by the Scottish Qualifications Authority, specifications in Wales are longer and more detailed documents.

There is no curriculum specification for the Welsh Baccalaureate. Design Principles for the Welsh Baccalaureate (2014) is the framework which outlines the structure, aims, learning outcomes, content, project, challenges and assessment details for this course. Note also that while there are a number of other qualification bodies who develop course specifications and assessments for AS and A-level qualifications, schools may only use the specifications and qualifications offered by

these organisations if the Welsh Joint Education Committee does not offer a qualification in that subject. For the purposes of the comparative analysis undertaken in this paper, only subject specifications designed by the Welsh Joint Education Committee will be discussed.

### 3.4 The technical form of curriculum specifications: Ireland and international jurisdictions

This section will explore similarities and differences between the technical form of curriculum specifications in Ireland and in a range of other jurisdictions. At the outset, however, it is important to bear in mind that this chapter is not always comparing like with like. Specifications in Ireland and Wales are designed with almost the entire student cohort in mind whereas in Ontario, Scotland and Queensland there are different specifications developed for different learners depending on the pathway through upper secondary they are following and the future they are aspiring to. Meanwhile in New Zealand, there is greater flexibility and students may be doing a variety of levels at once. This is not entirely dissimilar to Higher and Ordinary levels in Ireland and also to Scotland, where students can simultaneously follow a range of courses at different levels. Work exploring pathways and modularisation in Ireland and elsewhere will be conducted in parallel to this paper on the technical form of curriculum specifications. Adaptations to the template for curriculum specifications in a redeveloped senior cycle may be made to reflect diversifying pathways in senior cycle.

In recent years, senior cycle curriculum specifications in Ireland have followed a consistent, although not always uniform, template. This template usually includes the following elements:

- A **rationale**
- **Aims** and **objectives**
- A section on **related learning**
- A **specification overview** comprising the **structure of the strands** and **time allocation** (minimum 180 hours classroom contact time)
- A section on **keys skills** of senior cycle including literacy and numeracy, aligning them to the subject in question
- An outline on **teaching and learning** and **differentiation** apply to the subject in question.
- A section on the **strands of study** comprising the **learning outcomes** which describe the knowledge and skills students should develop during the course
- A section on **Assessment**.

Also included in many Leaving Certificate curriculum specifications are **appendices** which include glossaries with definitions of relevant terms, action verbs and/or core concepts used. The four recently revised Leaving Certificate Applied module descriptors contain a section with assessment guidelines or key assignments. In the case of English and Communications and Mathematical Applications, resources are also provided. The table below illustrates where variations occur in the most recently developed specifications.

In the case of Leaving Certificate Applied, the technical form of the recently revised modules are very similar to the technical form of the Leaving Certificate Established and contain many of the same elements with some exceptions. In addition, LCA modules often contain resources and some have assessment guidelines.

Year Introduced	2018	2018	2018	2019	2019	2020	2020	2021	2021
Programme	LCE	LCE	LCE	LCE	LCE	LCE	LCE	LCA	LCA
Subject	Economics	Computer Science	Agricultural Science	Art	Applied Maths	Classical Studies	Lithuanian Mandarin, Polish, Portuguese	Introduction to Information & Communication Technology	English and Communications
Length of document (number of pages)	33	34	34	36	27	30	35	28	59
Experience of Senior Cycle / Upper secondary education	√	√	√	√	√	√	√	√	√
Introduction/ rationale	√	√	√	√	√	√	√	√	√
Aims	√	√	√	√	√	√	√	√	√
Objectives	√	√	√	√	√	√	√	X	X
Related learning	√	√	√	√	√	√	√	√	√
Structure/ Overview	√	√	√	√	√	√	√	√	√
Outline of strands/ module	√	√	√	√	√	√	√	√	√
Time allocation	√	√	√	√	√	√	√	X	X
Key Skills incl. literacy and numeracy	√	√	√	√	√	√	√	√	√
Learning and Teaching	√	√	√	√	√	√	√	√	√
Differentiation	√	√	√	√	√	√	√	√	√
Strands of Study	√	√	√	√	√	√	√	√	√

<i>Students learn about and Students should be able to (learning outcomes)</i>	√	√	√	√	√	√	√	√	√
Assessment	√	√	√	√	√	√	√	√	√
Glossary of action verbs	√	√	√	√	X	√	X	X	X
Glossary of core concepts and terms	X	√	X	X	X	√	√	X	X
Other glossary	X	X	X	√	X	X	√	Resources	Resources

**Table 22:** Similarities and variations in the technical form of recent Leaving Certificate Established and Leaving Certificate Applied subject specifications.

To support comparison, the grid below compares, as far as is possible, the sections which the five other jurisdictions include in their curriculum specifications. These sections may appear in a different sequence in the respective jurisdictions. Note that, because there are overarching frameworks informing curriculum development in New Zealand and Scotland, rather than individual subject curriculum specifications, other key documents which contain curricular components are referred to i.e. the New Zealand achievement aims and objectives and the information provided in Scottish Course Specifications. Where the information comes from outside a framework, this is indicated by an asterisk.

Jurisdiction	Ireland	Queensland	Wales	New Zealand	Ontario	Scotland
	Individual subject specifications	Individual subject specifications	Individual subject Specifications	Curriculum Framework and other documents	Area of learning specifications	Framework & individual SQA course specifications
Approx. length	36 pages	85 pages	30 pages	Online html documents	250 pages per area (multiple subjects)	CfE: 317 pages Course specification length varies*
Experience of senior cycle	√	X	X	X	X	X*
Introduction/ Rationale	√	√	√	X	√	√*
Aims	√	X	√	X	√	√*
Objectives	√	√	√	√*	X	X
Related Learning	√	X	√	X	X	X
Structure/ Overview	√	√	X	X	√	√*
Outline of Strands/ module	√	X	X	X	X	X
Time allocation	√	√	√	X	X	√*
Key Skills	√	√	√	√ (competencies)	√	√
Literacy and Numeracy	√	√	X	√	√	X
Learning and Teaching	√	√	X	√	√	√*
Differentiation	√	X	X	X	√	X
Strands of Study	√	√	√	X	√	X
<i>Students learn about &amp; Students should be able to</i> (Learning Outcomes)	√	√	√	X	√	
Assessment	√	√	√	√	√	√*
Appendices incl. glossary	√	√	√	√	√	√*

**Table 23:** Jurisdiction Comparison, illustrating the components in various curriculum specifications/ frameworks



As table 19 illustrates, there are many commonalities in the approach taken to curriculum specification design in different jurisdictions. These might broadly be considered to represent a form of 'best practice', however, a more detailed analysis reveals that the language and terms used may have different resonances or meanings, depending on how they are used contextually. Sections with the same name and/or purpose may include more detail in some jurisdictions than in others. The level of detail may be different even in different subjects within the same jurisdiction, though the differences and divergences tend to be more pronounced across specifications developed a long time ago or developed at very different times. For these reasons, although two or more jurisdictions may include a section, this should not be taken to mean that the approach taken is the same.

### **Introduction/Rationale**

In Irish curriculum specifications, the rationale tends to offer several paragraphs about the nature of the relevant subject, as well as its role and importance in a larger context. It references the skills students acquire in the process of engaging with the learning outcomes, the opportunities which arise through the course of study and the many connections which can be made with other subjects and areas of study. The section on Rationale in **Queensland** curriculum specifications is similar in length, in making connections with other subjects, and in outlining the subjects' importance. Explicit links are also made to 21st century skills in Queensland curriculum specifications.

In **Scotland**, the rationale in course specifications published by the Scottish Qualifications Authority includes a brief statement about how National Courses reflect the Scottish Curriculum for Excellence, followed by another brief statement about the benefits of studying a particular subject and the connections it allows a learner to make with other areas of learning. In **Ontario**, rather than a rationale, every specification includes a section which details the place of a particular subject area in the wider curriculum. Specifications in **Wales**, published by the WJEC, outline the focus of the relevant specification and the opportunities it offers learners.

### **Aims and Objectives**

In all recent Irish specifications, after the section on rationale, both aims and objectives are included, in two separate sections. Usually comprising of a short paragraph, aims tend to focus on the purpose of the specification and long-term goals. In most of the jurisdictions studied here, as they are in Ireland, they are quite succinct and focused. Objectives are generally presented in bullet points and commence with action-verbs. They outline the specific skills and knowledge that students will be expected to develop over the course of two years. While the level of detail included in the objectives can vary, most recent Irish specifications have around seven objectives.

In **Ontario**, neither aims nor objectives are explicitly mentioned in specifications, though aims are sometimes alluded to. In a small number of specifications, Science for example, aims are briefly referred to as part of the Overview of the Programme.

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The overall aim of the secondary science program is to ensure scientific literacy for every secondary school graduate. To better achieve this aim, all courses in the program are designed to focus on science not only as an intellectual pursuit but also as an activity-based enterprise within a social context.  
(Ontario Curriculum for Science, Years 10-11, Ministry of Education, 2008)

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A set of overall expectations introduces each individual strand and these expectations are quite similar to the objectives as they appear in Irish specification.

In **Scotland**, the overall aims for all learners, aged 3 to 18, are outlined in Curriculum for Excellence, a Framework for Teaching and Learning (Scottish Government, 2008). Subject specific aims are also outlined in the various course specifications, published by the Scottish Qualifications Authority. In Curriculum for Excellence, the introductory Context section specifies the very broad aim for education in Scotland. More specific aims are then detailed later in the framework, in the form of four bullet points. In course specifications, published by the Scottish Qualifications Authority, just after the course rationale is a section entitled “Purpose and Aims”. This section commences with a short paragraph which sums up the purpose of the course by outlining broadly what students will achieve in the course of their study and is very similar to the way in which aims are expressed in Irish specifications. The aims – which follow the purpose - in Scottish course specifications comprise of the specific skills and understanding that students will develop. Articulated in bullet points, these aims more closely resemble what are labelled objectives in Leaving Certificate Established specifications.

In **Wales**, similar to Ireland, all subject specifications (published by WJEC and accredited by the Welsh government) include aims and objectives. Unlike in Ireland, in most specifications the aims and objectives tend to appear together in one section, which features one or two sets of bullet points or occasionally a prose paragraph. They are used in the opposite way to how they appear in Irish specifications. The first part of this section (the bullet points) presumably represents the aims. This is articulated in the form of statements which commence with action-verbs and is very similar to objectives, as they appear in Irish specifications. The second list or the paragraph which follows (presumably the objectives) are much wider set of goals which resemble the aims in an Irish specification.

In subject specifications in **Queensland**, there is no specific section for aims, though they are sometimes mentioned briefly in the introduction. Objectives feature more prominently and appear in many different sections of the curriculum specification, divided into syllabus and unit objectives. The syllabus objectives are similar to objectives in Leaving Certificate Established and specifications and the recently Leaving Certificate Applied modules, while unit objectives are more like Learning Outcomes than objectives. The level of detail of Queensland unit objectives varies from subject to subject. For example, the Business specification outlines the Business Life Cycle and lists Analytical Tools over two pages while the French specification includes Mandatory Language Elements which are detailed over six pages, and also include a section on text selection and text types.

**New Zealand** is somewhat different, as objectives are specifically related to achievement. The term objectives is used in New Zealand in much the same way that the term learning outcomes is used in Ireland.

### **Related Learning**

The purpose of the related learning section in **Ireland's** curriculum specifications is to highlight continuity from earlier phases of education and to suggest some ways the learning achieved in this subject might benefit students in future, as they progress to learning beyond school. While a section on related learning does not appear in any of the jurisdictions explored in this paper, most refer to it in some capacity. In **Queensland** for example, a paragraph about Pathways outlines how

a particular subject and the knowledge and skills it helps students to develop can be useful for future studies and work/careers. However, this section does not relate this phase of study to earlier phases of education, as it does in Ireland. **Ontario** takes a very similar approach.

In the **New Zealand** Curriculum, there is an outline of Learning Pathways during and after school. This is not specific to any particular subject, unlike Irish specifications. Pathways to progression are identified in **Scotland's** Curriculum for Excellence, although this is specifically in relation to numeracy and literacy and there is much less detail than in Irish specifications. In **Welsh** GCE AS/A Level specifications, there is a short section dedicated to prior learning and progression.

In **Queensland, Scotland, New Zealand** and **Ireland**, references to health and wellbeing are included in overview or Framework style documents but not in curriculum specifications. In **Ontario**, there are some references to well-being in curriculum specifications, with respect to supporting students' well-being and ability to learn, as well as the role of mental health and well-being. There is also a much more detailed plan of action about promoting wellbeing in education, outlined in the policy document *Achieving Excellence. A Renewed Vision for Education in Ontario* (2014).

### **Key skills or competencies**

Please see chapter 5 for a detailed analysis of approaches to skills or competencies (knowledge, skills and values/dispositions) in a range of international jurisdictions.

### **Time allocation**

While all Leaving Certificate Established specifications are designed for a minimum of 180 hours of class contact time, there is no mention of time (notional or otherwise) in Leaving Certificate Applied modules. In Scotland, teachers have 25 hours of classroom contact time and the school decides how many hours to allocate to subjects and modules. In addition, the Scottish Qualifications Authority states that "National Courses at National 5 and Higher are notionally based on 160 hours of directed learning and 80 hours of self-directed learning [while] Advanced Higher National Courses at Advanced Higher are notionally based on 160 hours of directed learning and 160 hours of self-directed learning..." (SQA, 2020).

Time allocation is approached very differently in **Queensland** upper secondary specifications. 220 hours are allocated to each subject over the course of two years with each subject consisting of four units. Queensland's curriculum specifications explicitly state that each of the four units has been developed for a notional time allocation of 55 hours of teaching and learning, including assessment. Furthermore, within each unit, the hours are then broken down into notional hours per topic. For example, where there are two topics in a unit, one might be allocated 25 notional hours and the other 30 hours. This time includes a specified amount of time for summative internal assessment. In addition, where there is project or fieldwork, it is specified that a minimum number of hours should be given to this.

In **Ontario** a credit is granted in recognition of the successful completion (completion with a final percentage mark of 50 per cent or higher) of a course that has been scheduled for a minimum of 110 hours. Credits are granted by a principal on behalf of the Minister of Education for courses that have been developed or authorized by the ministry. A half-credit may be granted for each 55-hour part of a 110-hour ministry-developed course in accordance with the policy outlined in the Ontario Schools Policy and Programme requirements (2016).

In **New Zealand**, there is no reference to time allocations for subjects or components within subjects.

### **Learning and Teaching/Pedagogies**

In **Ireland**, while Continuous Professional Development plays a very important role in supporting teachers understanding of and evolution in their use of pedagogies, a section on teaching and learning (or vice versa) is included in Leaving Certificate Established specifications and Leaving Certificate Applied modules. It may contain more or less information, depending on the context and includes or is followed by guidance on differentiation in the classroom and/ or assessment (as outlined below).

Guidance on approaches to teaching and learning is included within specifications or frameworks in most of the jurisdictions explored here. Where it is not, in the case of **Wales**, it is contained within separate documents such as guidance for teaching. For example, the guidance for teaching in [GCE/ A Level Geography](#) is contained in two separate documents, consisting of 230 pages, including examples of planning for the various units, elaboration of course content as well as suggested teaching and learning approaches and resources.

In the **New Zealand Curriculum**, teaching and learning approaches are much more concise. A three page section within the Curriculum – entitled *Effective Pedagogy, Teacher actions promoting student learning* - outlines the kinds of teaching approaches that “consistently have a positive impact on student learning”. This section features a wide breadth of approaches including information about creating a supportive learning environment; encouraging reflective thought and action; enhancing the relevance of new learning and making connections to prior learning. Linked to this is a section on purposeful assessment, which features a list of characteristics of effective assessment. This information is supplemented by a section on Effective Pedagogy on the New Zealand Curriculum Online website, which features videos about a range of teaching and learning approaches. In **Queensland**, specifications outline the teaching and learning strategies that should be included in the classroom.

The **Scottish** approach to supports for teaching and learning is different again. Because the Scottish Qualifications Authority (SQA) develops and publishes the course specifications for the upper secondary sector, the focus of the specification is on assessment. There is however, usually a section devoted to learning and teaching approaches. This section is of varying length. For example in Advanced Higher History it is one page long but in the Higher course for Modern Languages it is 7 pages long and is very specific to languages, with an outline of approaches to teaching each of the language skills.

### **Differentiation, accessibility and inclusion**

As referred to above, Leaving Certificate Established specifications and Leaving Certificate Applied modules provide for differentiation in a number of ways. The level of detail with respect to differentiation varies across recently (re)developed specifications. Generally, this section contains generic information on the importance of differentiation in the classroom. A number of specifications state that the content matter of the course is specified in broad terms to allow the selection and exploration of topics in ways that are of most interest and relevance to the lives of all learners.

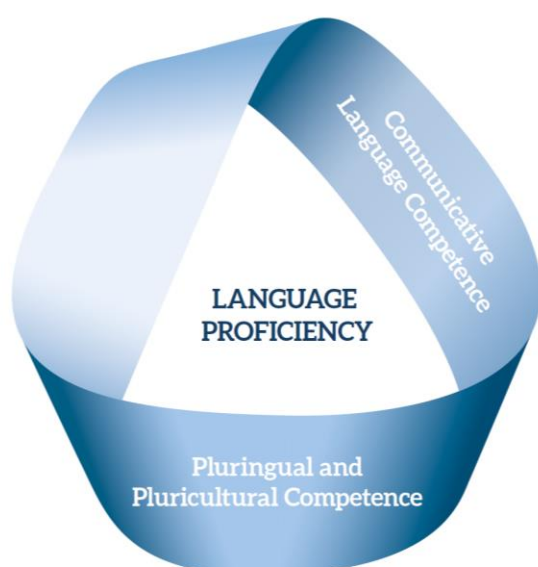
Some specifications, such as Leaving Certificate Economics (2018), Applied Mathematics (2019) and Art (2019), contain specific references to the role of differentiation through the learning outcomes. This is further delineated in the case of Economics and Applied Mathematics in relation to assessment, where a table is provided, outlining the role of differentiation at both higher and ordinary level. In the case of the recently revised Leaving Certificate Applied module descriptors, differentiation is clearly outlined and delineated into three areas; differentiation through learning outcomes; differentiation in teaching and learning and differentiation in assessment.

The term differentiation is not used in specifications or frameworks from the jurisdictions explored here, with the exception of **Ontario**. It provides guidance on a differentiated approach to teaching and learning in their recently developed specifications, in addition to detailed guidance on inclusion. One of the most recently developed specifications in Ontario, American Sign Language as a Second Language (2021), has a more in-depth focus on inclusion. For example, it outlines how the principles of inclusive education can best be implemented as well as providing guidance about indigenous education and cultural safety.

In **Queensland**, there is a separate senior cycle programme called the Queensland Certificate of Individual Achievement (QCIA) which recognises and certifies the learning achievements of students whose learning is part of an individualised learning program. The QCIA is underpinned by a core framework entitled Guidelines for Individual Learning (GIL), a curriculum, assessment and reporting framework for schools when developing individualised curriculum plans for senior secondary students working towards the QCIA. The importance of embracing inclusivity arising from post-colonial perspectives of the geo-political landscape is evident in **Queensland, Ontario** and **New Zealand**, which refer to and recognise the perspectives of their indigenous populations, while specifications in **Wales** all have a section which states that learners should be given opportunities, where appropriate, to consider a Welsh perspective.

### **Strands of Study**

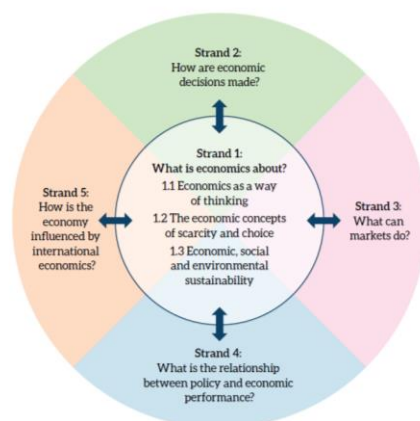
In the most recently developed Leaving Certificate Established specifications, learning is organised into strands of study (usually between 2 and 4). Most specifications state that students' engagement and learning are optimised by a fully integrated experience of all strands. To further illustrate the structure of the strands, graphics are often included. For example, a Möbius strip (pictured below) is used to illustrate the integrated and interdependent nature of the strands and elements in recent Leaving Certificate specifications for Lithuanian, Mandarin Chinese, Polish and Portuguese (Government of Ireland, 2020).



**Figure 2:** Graphic illustrating the integrated and interdependent nature of strands and elements.

Within the individual strands, the learning is usually introduced by one or a number of paragraphs, explaining the purpose and intended learning within the strand. In addition, sometimes, such as in the case of Leaving Certificate Economics (Government of Ireland, 2018) this is accompanied by a diagram

### Strand 1: What is economics about?



Strand 1 is a unifying strand that sets the context for the Leaving Certificate Economics course. The learning outcomes in this strand address particular knowledge, skills and values which students will cultivate and build on gradually as they progress through the course. This strand relates to both the students' introduction to economics and its progressive development over two years, where its themes are embedded within learning outcomes throughout the other strands. As students progress through each strand, there will be a systematic development of their fundamental knowledge, economic skills and values. Students' learning in economics will be used to support informed and well-reasoned conclusions.

Strand 1 introduces students to the fundamental economic principles of scarcity and choice. Resources are limited and people cannot have all the goods and services they want. Understanding decisions at various levels – individuals, firms, businesses, governments and other institutions, is necessary to understanding the functioning of an economy.

Economic, social and environmental sustainability provides a context in which economics functions today. Sustainable development is about people having satisfying lives and a healthy environment now and in the future. It is essential for the wellbeing of people and the planet that economic growth is achieved without harming society or the environment.

**Figure 3:** Leaving Certificate Economics specification (Government of Ireland, 2018)

Note that, in the case of Leaving Certificate Applied, rather than strands of study, the specifications are divided into modules and units.

**Learning Outcomes** (*Students learn about* and *Students should be able to*)

Following on from the strand introduction, the learning is presented in two columns; the first column on the left hand side, entitled 'Students learn about' outlines the focus of the learning while the column on the left focuses on what students will do, more commonly known as learning outcomes. Below is an example of the Strand Introduction and the two columns as they appear in the Create Strand in Leaving Certificate Art (Government of Ireland, 2019). In this example, the Students learn about column contains single words or short phrases while learning outcomes are denoted by bullet points.

## Create strand

In Art, learners will be engaged in the process of making/creating art from conception through to realisation. Using a range of skills and their chosen materials, as appropriate, learners will create work based on a stimulus. As they develop their own work they will also be given the opportunity to respond to it as it progresses. This will provide them with an opportunity to understand what works and help them to gain confidence in changing direction if required. During reflection on the creative process, learners can examine their developing work and decide whether to fully realise it or if further research may be necessary. An important part of creating is that they also recognise the moment when a work is complete and know when to stop.

In learning to create work, the learning outcomes describe and capture the **Making** involved; the use of **Contextual enquiries**, especially in learning to understand and use the art elements and design principles; the **Process** involved in following lines of enquiry and deciding on the realised work; the knowledge, skills and understanding required to communicate through the **Realisation/Presentation** of their work. Some of the learning outcomes in the Create Strand can apply to both the practical making of work and to Visual Studies.

STUDENTS LEARN ABOUT	STUDENTS SHOULD BE ABLE TO
2.1 Making	<ul style="list-style-type: none"> <li>▶ develop concepts in imaginative and creative ways</li> <li>▶ interpret primary sources including the natural and built environment and the human figure as a source of inspiration</li> <li>▶ apply appropriate skills, knowledge and techniques</li> <li>▶ create realised work based on their research</li> </ul>
2.2 Contextual enquiries	<ul style="list-style-type: none"> <li>▶ apply the art elements and design principles in creating and evaluating their work</li> <li>▶ critique the work of others and their own</li> <li>▶ translate their experience of Visual Studies into their practical work</li> </ul>

**Figure 4:** Leaving Certificate Art specification (Government of Ireland, 2019).

In the next example, taken from Leaving Certificate Classical Studies (Government of Ireland, 2020), there is no strand introduction, while the left-hand column contains a little more detail than the previous example and learning outcomes are numbered.

## Strand 3: Power and identity

STUDENTS LEARN ABOUT	STUDENTS SHOULD BE ABLE TO:
<b>The time of Alexander or Caesar</b>	<ol style="list-style-type: none"> <li>3.1. Recognise key historical events that shaped the world of Alexander (the late Classical period) or Caesar (the late Roman Republic)</li> <li>3.2. Identify key political and social tensions at the time in which Alexander or Caesar came to power</li> <li>3.3. Compare maps showing the changes in political geography before and after the conquests of Alexander or Caesar</li> </ol>
<b>The political and military exploits of Alexander or Caesar</b>	<ol style="list-style-type: none"> <li>3.4. Create an outline of the life of Alexander or Caesar.</li> <li>3.5. Examine key moments and events during Alexander's Persian campaign or Caesar's Gallic campaign</li> <li>3.6. Discuss the composition and tactics of the army of Alexander or Caesar in light of its operations during at least one major military event</li> </ol>

**Figure 5:** Leaving Certificate Classical Studies specification (Government of Ireland, 2020).



In the last example (below), taken from Leaving Certificate Agricultural Science (Government of Ireland, 2018), the introduction is shorter, the left-hand column is numbered and learning outcomes are presented as bullet points.

### Strand 3: Crops

In their study of Leaving Certificate Agricultural Science, students develop an understanding of the role and importance of a variety of crops, including crops as forage and crops for human consumption, their management and production, and their contribution to future sustainable development. In Ireland, our location and climate are conducive to a predominantly grass-based system for beef and dairy production. National sustainability programmes unite stakeholders in promoting and supporting efficient and sustainable production into the future.

STUDENTS LEARN ABOUT:	STUDENTS SHOULD BE ABLE TO:
<p><b>3.1 Plant physiology</b></p>	<ul style="list-style-type: none"> <li>▶ relate the main structures of the plant to its fundamental processes: photosynthesis, respiration, transpiration and nutrient absorption</li> <li>▶ describe the principles of genetic improvement and selection:                             <ul style="list-style-type: none"> <li>• performance testing</li> <li>• physical traits</li> <li>• progeny testing</li> <li>• genotyping and genomic selection</li> <li>• natural selection</li> </ul> </li> <li>▶ understand the principles of genetic engineering, identifying genes in characterised crop genomes and understanding how they produce proteins to tackle specific crop diseases</li> </ul>
<p><b>3.2 Classification/identification</b></p>	<ul style="list-style-type: none"> <li>▶ apply their knowledge of structure and function to identify a variety of grasses, cultivated crops and weeds</li> <li>▶ distinguish between annual, biennial and perennial lifecycles</li> <li>▶ explain the importance of plant breeding and seed variety</li> </ul>

**Figure 6:** Leaving Certificate Agricultural Science specification, 2018

Learning outcomes, in Irish specifications, describe what students should know, understand and be able to do after a defined period of time. They seek to achieve coherence such that the aims and objectives of the subject, the learning and teaching strategies adopted, the integration of knowledge and key skills and the assessment approaches employed are consistent with each other. As noted in chapter 1, the extent to which pedagogies are – and should be – implicit or explicit within learning outcomes and in the wider specification is contested.

The number of learning outcomes can vary in Leaving Certificate Established specifications/ Leaving Certificate Applied module descriptors. In recent Leaving Certificate Established specifications, on average there are approximately fifty learning outcomes across the various strands and elements whereas in Leaving Certificate Applied module descriptors, there are fewer learning outcomes in each unit, although there are more units, so there are approximately the same number in total.

In both programmes, learning outcomes commence with an action verb and describe the intended learning i.e. what a learner will know, understand and be able to do after a period of learning. In

Ireland, learning outcomes are common for all learners and levels.<sup>3</sup> They must be broad enough to allow all learners to achieve but specific enough that they can be measured and assessed.

For subject/ course specifications in **Ontario**, learning is also organised into groups of learning. These are high level thematic groups, much like strands in Irish specifications. This is followed by overall expectations, comprising of around three bullet points. These expectations describe in general terms the knowledge and skills students are expected to demonstrate by the end of the course. In recent specifications from Ontario, relevant transferable skills are linked to the overall expectations of the course in question. There is no equivalent to Overall Expectations in Irish specifications, apart from perhaps a narrative paragraph in some specifications. Within each Strand, after the Overall Expectations, there is a numbered sub-heading, which closely resembles a Strands Unit in an Irish specification, within which there are specific expectations (learning outcomes). Each of the bullet points in the Overall Expectations relates to a sub-heading. In the first example below from Biology Grade 11, University Preparation, the overall expectation of the F1 group of learning outcomes is 'F1. evaluate the importance of sustainable use of plants to Canadian society and other cultures.'

Learning outcomes in Ontario are slightly more detailed than in Ireland, as they contain more specific information. In the case of Mathematics and Sciences courses, learning outcomes are followed by sample questions, problems and/ or issues, whereas, in the case of social sciences, languages, the Arts and some other subjects, some examples and/or teacher prompt(s) follow the learning outcomes. Furthermore, Ontario specifications include an overview of the programme, as well as curriculum expectations for all learners regardless of the level.

Below is an example from a section of the Biology Grade 11 University Preparation specification, contained within the Grade 11 and 12 Science Curriculum. This shows how the Overall expectations relate to the sample issues and questions are used

### **'Strand F. Plants: Anatomy, Growth, and Function**

#### **Overall Expectations**

By the end of this course, students will:

- F1. evaluate the importance of sustainable use of plants to Canadian society and other cultures;
  - F2. investigate the structures and functions of plant tissues, and factors affecting plant growth;
- 

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<sup>3</sup> Exceptions to this are Leaving Certificate Applied Mathematics and Computer Science which contains a small number of learning outcomes or aspects of learning outcomes that apply only to students intending to do the examination at higher level.

F3. demonstrate an understanding of the diversity of vascular plants, including their structures, internal transport systems, and their role in maintaining biodiversity.

### **Specific Expectations**

#### **F1. Relating Science to Technology, Society and the Environment**

By the end of this course, students will:

**F1.1** evaluate, on the basis of research, the importance of plants to the growth and development of Canadian society (e.g., as a source of food, pharmaceuticals, Aboriginal medicines, building materials, flood and erosion control; as a resource for recreation and ecotourism) [IP, PR, AI, C]

**Sample issue:** The agricultural sector holds great economic potential as demand increases for products such as biofuels, biochemicals, and biopharmaceuticals. Bioresources could also support our efforts to produce renewable energy, improve health, and minimize environmental impact. However, critics are concerned about the impact of bioresources on the availability of food crops and the price of food.

**Sample questions:** In what ways does the local food movement contribute to community development? How does the re-introduction of native plant species along river banks help to prevent land erosion? What plant species are considered important in sustaining Canada's growth in the agricultural sector? How might the increasing demand for straw-bale housing materials support Canada's agricultural sector and increase the sustainability of other natural resources?

Note that only some strands or learning outcomes have sample issues and/ or questions in specifications like Science and others.

Another example, taken from the Drama, Grade 11, University/ College Preparation course (contained within the Arts Curriculum) demonstrates how examples and teacher prompts are used within learning outcomes.

## Strand B. Reflecting, Responding and Analysing

### Overall Expectations

**By the end of this course, students will**

**B1. The Critical Analysis Process:** use the critical analysis process to reflect on and evaluate their own and others' drama works;

**B2. Drama and Society:** demonstrate an understanding of how societies present and past use or have used drama, and of how creating and viewing drama can benefit individuals, groups, and communities;

**B3. Connections Beyond the Classroom:** identify knowledge and skills they have acquired through drama activities, and demonstrate an understanding of ways in which they can apply this learning in personal, social, and career contexts.

### Specific Expectations

#### B1 The Critical Analysis Process

B1.1 use the critical analysis process before and during drama projects to assign roles within the group, monitor the group process, and modify the roles and process as needed (e.g., use brainstorming and group discussion to generate ideas, assign roles, and agree on a process that includes a mechanism for reviewing progress and providing feedback; use journal writing to reflect on progress during rehearsal; create and use a self- or peer-assessment tool based on student developed criteria)

**Teacher prompts:** "How will you track your group's progress during the rehearsal process?" "How can you build opportunities for peer feedback into the process to improve your group's creative work?"

Similar to the Objectives in Irish specifications, learning in **Queensland** specifications is organised into syllabus objectives. These have a more direct link, however, with later content insofar as they inform the Unit Objectives (a Unit in Queensland is like a Strand in Irish and Ontario specifications). These syllabus objectives commence with cognitive (action) verbs and outline what students will have the opportunity to learn in every unit and be able to do at the end of a period of learning. Unlike NCCA, which currently uses Anderson and Krathwohl's revision of Bloom's taxonomy and the SOLO taxonomy (as well as subject-specific taxonomies) to inform the writing of learning outcomes, the Queensland Curriculum and Assessment Authority (QCAA) use Marzano and Kendall's (2007) New Taxonomy of Educational Objectives as the framework for their new Senior secondary syllabi and each new syllabus adopted the taxonomy's terminology and classification of cognitive skills and the learning objective in the new syllabi all begin with a cognitive verb describing the depth at which students will be required to demonstrate their knowledge during assessment (QCAA, 2018a).

Similar to the use of Overall Expectations in Ontario, learning in Queensland specifications is then organised into numbered Unit Objectives which commence with action verbs. This is then contextualised for the subject matter and requirements of the unit (like elements and learning outcomes). Below is an example of unit objectives from the Senior Biology course 2019 (updated July 2022). Note that key words are highlighted and that IA1 and IA2 refer to Internal assessments while the EA refers to External assessments

## Unit objectives

Unit objectives are drawn from the syllabus objectives and are contextualised for the subject matter and requirements of the unit. Each unit objective must be assessed at least once.

Unit Objective	IA1*	IA2	EA
1. describe <b>and</b> explain <b>biodiversity and ecosystem dynamics</b>			●
2. apply understanding <b>of biodiversity and ecosystem dynamics</b>	●	●	●
3. analyse evidence <b>about biodiversity and ecosystem dynamics</b>	●	●	●
4. interpret evidence <b>about biodiversity and ecosystem dynamics</b>	●	●	●
5. investigate phenomena <b>associated with biodiversity and ecosystem dynamics</b>		●	
6. evaluate processes, claims <b>and</b> conclusions <b>about biodiversity and ecosystem dynamics</b>		●	
7. communicate understandings, findings, <b>arguments and conclusions about biodiversity and ecosystem dynamics.</b>		●	

**Table 24:** Senior Biology Course, Queensland, 2019

Like the specific expectations in Ontario specifications, and Learning Outcomes in Ireland, there is a list of 'subject matter' in Queensland specifications. For most subjects, this is a single column with statements commencing with action-verbs. This 'subject matter' is similar to the Students Should be Able to' column in Irish specifications as it begins with a list of action verbs, which resemble the 'Students will learn about' column in Irish specifications.

In addition to this subject matter, a small number of specifications in Queensland, such as Senior Biology, contain an additional column which contains a guidance section. An example of this is below from the same specification. It should be noted that this is very rare in Queensland specifications and is tailored specifically to suit the subject in question:

Subject Matter	Guidance
<p><b>Biodiversity</b></p> <ul style="list-style-type: none"> <li>● <b>recognise</b> that biodiversity includes the diversity of species and ecosystems</li> <li>● <b>determine</b> diversity of species using measures such as species richness, evenness (relative species abundance), percentage cover, percentage frequency and Simpson's diversity index</li> <li>● use species diversity indices, species interactions (predation, competition,</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Notional time:</b> 9 hours</li> <li>● <b>Use</b> local context throughout the unit to develop the content objectives.</li> <li>● Diversity indices and measurements should be supported through fieldwork and based on classification. Measures of biodiversity, i.e. species richness (S) and Simpson's diversity index (D) should be used where applicable.</li> </ul>

symbiosis, disease) and abiotic factors (climate, substrate, size/depth of area) to **compare** ecosystems across spatial and temporal scales

- **explain** how environmental factors limit the distribution and abundance of species in an ecosystem.
- **Mandatory practical:** Determine species diversity of a group of organisms based on a given index.

- **Formula:** The formula used to quantify biodiversity of a habitat is Simpson's diversity index (SDI), shown as:

$$SDI = 1 - \left( \frac{\sum n(n-1)}{N(N-1)} \right)$$

where:

N = total number of organisms of all species

n = number of organisms of one species

- **Manipulative skill:** Use **appropriate** technology,
- **Manipulative skill:** Use **appropriate** technology, such as data loggers, chemical tests, turbidity tubes and other equipment to measure factors.
- **Suggested practical:** Measure abiotic factors in the classroom using field samples (e.g. pH, nitrogen nutrients, salinity, carbonates, turbidity).
- **Suggested practical:** Measure abiotic factors in the field (e.g. dissolved oxygen, light, temperature, wind speed, infiltration rate).

### Classification processes

- **recognise** that biological classification can be hierarchical and based on different levels of similarity of physical features, methods of reproduction and molecular sequences
- **describe** the classification systems for similarity of physical features (the Linnaean system)
- methods of reproduction (asexual, sexual – K and r selection)
- molecular sequences (molecular phylogeny – also called cladistics)
- **define** the term clade
- **recall** that common assumptions of cladistics include a common ancestry, bifurcation and physical change
- **interpret** cladograms to infer the evolutionary relatedness between groups of organisms
- **analyse data** from molecular sequences to infer species evolutionary relatedness
- recognise the need for multiple definitions of species
- **identify** one example of an interspecific hybrid that does not produce fertile offspring (e.g. mule, *Equus mulus*)
- **explain** the classification of organisms according to the following species interactions: predation, competition, symbiosis and disease

### Notional time: 12 hours

- Students should **understand** that the concept of classification is directly related to the purpose for which the **data** will be used.
- Students should **recognise** that the Linnaean system does not rely solely on physical features for classification.
- Classification should be supported by the analysis of field data.
- Students should recognise that conserved sequences (e.g. mitochondrial DNA) are assumed to accumulate mutations at a constant rate over time and, therefore, provide a method for dating divergence.
- **Identification** of applications of molecular phylogeny (DNA barcoding and genetic testing) should be linked to understanding of subject matter in Unit 4.
- Refer to the glossary for a definition of **clade**.
- Students should be familiar with the **limitations** of different definitions of species, e.g. biological species concept and phylogenetic species concept.
- Classification of ecosystems could be based on the Holdridge life zone classification scheme, Specht's classification system,

- **understand** that ecosystems are composed of varied habitats (microhabitat to ecoregion)
- **interpret** data to **classify** and name an ecosystem
- **explain** how the process of classifying ecosystems is an important step towards effective ecosystem management (consider old-growth forests, productive soils and coral reefs)
- **describe** the process of stratified sampling in terms of purpose (estimating population, density, distribution, environmental gradients and profiles, zonation, stratification)
- site selection
- choice of ecological surveying technique (quadrats, transects)
- minimising bias (size and number of samples, random-number generators, counting criteria, calibrating equipment and noting associated precision)
- methods of data presentation and analysis.
- **Mandatory practical: Use** the process of stratified sampling to **collect** and analyse primary biotic and abiotic field data to classify an ecosystem.

ANAE classification system or EUNIS habitat classification system.

**Table 25:** Senior Biology Course, Queensland, 2019

Queensland's specifications also include instrument-specific marking guides, which outline the expected characteristics of student work and the marks allocated at each level. Arguably, this level of detail is provided to support summative internal assessment by teachers and to support consistency and a shared understanding of standards between and across schools.

**Scottish** course specifications, created by the Scottish Qualifications Authority, use a different structure. Instead of learning outcomes, specifications include details of skills, knowledge and understanding sampled in the course assessment, though the way this is expressed varies greatly from subject to subject. For example, in AS Higher History (DATE), a table is provided for each of ten possible topics that could be covered within each key issue for each field of study. The table includes a summary of the learning followed by key issues within that field of study. The latter is then broken down a list of bullet points which outline a description of the content. By contrast, the Physics course specification (DATE) outlines what students should know from particular aspects of physics e.g. electromagnetism and how they should be able to use what they know to solve problems.

In **Welsh** specifications, learning is summarised at the beginning of specifications, much like the overview section in Leaving Certificate specifications. This is followed by units (similar to Strands), of which there are usually four units.

After the aims and objectives, the 'subject content' (as it is known) is outlined. There is then an introduction to each unit which states how the unit will be assessed; the length of the terminal examination; the percentage weighting and the value of this in relation to the entire qualification.

Within each unit, the learning is broken down into 'content areas', which are similar to the 'Students learn about' column, as they are known in Leaving Certificate, although there are considerably more of them in Welsh specifications. Content areas contain "amplifications" which are statements which resemble learning outcomes insofar as they start with action verbs, although there are far more of them and they are very specific and detailed.

For example, GCE AS and A Level Business Curriculum (WJEC, 2019) comprises of 4 units (strands) and 29 content areas (units) and more than 380 amplifications. 'Unit 4: Business in a Changing World' of same has 7 content areas, within this unit are as they are referred to are

- Change
- Risk management
- PEST factors
- Ethical, legal and environmental factors
- International trade
- Globalisation
- The European Union

There are a total of 81 amplifications across the 7 content areas of this entire unit. The amplifications for the first two content areas (change and risk management) are below:

Content	Amplification
Change	<p><b>Explain</b> the causes of change in business including a change in the size of the business, a change in ownership, developments in technology, market changes, consumer tastes, legislation, changes in the workforce and changes in the economy</p> <p><b>Distinguish</b> between internal and external causes of change</p> <p><b>Distinguish</b> between planned and unplanned change</p> <p><b>Explain</b> the effects of change on business including the need to change production methods and update equipment, need to develop new products, need to meet legal requirements, need to retrain the workforce and need to look for new markets</p> <p><b>Explain</b> the importance of managing change effectively</p> <p><b>Explain</b> different approaches to managing change including J. Storey's four different approaches</p> <p><b>Explain</b> why there may be resistance to change and ways of removing resistance including Lewin's three step process, changes in organisational culture and the role of leadership</p> <p><b>Explain</b> how the management of change can be evaluated</p> <p><b>Evaluate</b> the impact of change on a business and its stakeholders</p> <p><b>Evaluate</b> the importance of managing change effectively</p>



<p>Risk Management</p>	<p><b>Identify</b> the risks that businesses are likely to encounter, including natural disasters, failure of equipment/technology, employee error, supply problems, economic factors, legal challenges, public relations and product failures</p> <p><b>Explain</b> that some risks are more certain to happen than others and that this will affect the decision as to how much a business will be willing to spend on their prevention</p> <p><b>Explain</b> the importance of risk assessment as a tool for avoiding risks</p> <p><b>Explain</b> how some risks can be dealt with by preventative actions such as installing water sprinklers, backing up IT data and training employees</p> <p><b>Explain</b> the difference between insurable and uninsurable risks</p> <p><b>Explain</b> what is meant by contingency planning and crisis management</p> <p><b>Explain</b> ways in which businesses can use contingency planning to deal with risks that may affect their activities such as having contingency funds, alternative production arrangements, allocating responsibilities to managers/employees and dealing with public relations in the event of a crisis</p> <p><b>Evaluate</b> the possible responses of a business to the potential risks that it faces</p> <p><b>Evaluate</b> the importance of risk management and contingency planning to a business and its stakeholders</p>
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**Table 26:** GCE AS/ A Level in Business specification, P27, WJEC, 2019

It is striking how few action verbs are used in the amplifications above, with significant reliance on the verbs 'explain' and 'evaluate'.

In **New Zealand**, learning is outlined differently as the New Zealand curriculum is an over-arching document which is not subject specific. Achievements objectives, indicators, assessment qualifications and achievement standards are provided for each subject and level and are published separately on the Ministry of Education website.

Achievement objectives are very detailed statements which are quite similar to learning outcomes, commencing with action verbs and having a fairly specific and often measurable outcome. For example, the Achievement Objectives for Level 8 Geography (2010) include the following:

### **Achievement objective 8.1**

Students will gain knowledge, skills, and experience to:  
understand how interacting processes shape natural and cultural environments, occur at different rates and on different scales, and create spatial variations.

### **Indicators**

- Analyses the interactions between natural and/or cultural processes that shape an environment.
- Identifies and explains where and how processes operate at different rates and scales in an environment.

- Describes and accounts for the nature and distribution of different features in an environment.
- Possible context elaborations
- How interacting processes create spatial and temporal variations at Muriwai Beach.
- Identifies and gives reasons for the spatial variations of a cultural process in a specified setting.
- Develops the framework for a research project and implements it.
- The causes of patterns of tourism development in different places over different time periods.

### Assessment for qualifications

- Consider how student learning could be assessed using the geography achievement standards.
- Consider alternative linkages between the achievement objective and achievement standards.

### Achievement standards

- 91426 Geography 3.1 Demonstrate understanding of how interacting natural processes shape a New Zealand geographic environment; External, 4 credits.
- 91427 Geography 3.2 Demonstrate understanding of how a cultural process shapes geographic environment(s); External, 4 credits.
- 91428 Geography 3.3 Analyse a significant contemporary event from a geographic perspective; Internal, 3 credits.
- 91429 Geography 3.4 Demonstrate understanding of a given environment(s) through selection and application of geographic concepts and skills; External, 4 credits.
- 91430 Geography 3.5 Conduct geographic research with consultation; Internal, 5 credits.
- 91431 Geography 3.6 Analyse aspects of a contemporary geographic issue; Internal, 3 credits.
- 91432 Geography 3.7 Analyse aspects of a geographic topic at a global scale; Internal, 3 credits.
- 91433 Geography 3.8 Apply spatial analysis, with consultation, to solve a geographic problem; Internal, 3 credits.

(<https://seniorsecondary.tki.org.nz/Social-sciences/Geography/Achievement-objectives/Level-8>  
Accessed online 3 Jan 2023)

It is clear from analysing the various different specifications, from the jurisdictions in question, that learning outcomes are scaffolded in a variety of different ways. While we currently use two columns ('Students learn about column' on the left hand side 'Students will be able to' on the right hand side - the learning outcomes), this is approached differently in other jurisdictions. The most notable differences can be seen in the likes of Ontario and Queensland. The use of Overall Expectations in Ontario and Unit Objectives in Queensland to introduce Strands is quite different from the Irish or indeed the Welsh or Scottish approach. Furthermore, in Queensland and Ontario in particular, there is more specific information given alongside learning outcomes such as sample issues, questions, prompts and examples. The possible implications and learnings for the technical form of curriculum specifications will be considered further in this paper, in the summary of this chapter, in the overall conclusions, and through 'road testing' of the proposed template.

## Assessment

When it comes to the technical form of curriculum specifications, the degree of detail provided in relation to assessment varies significantly across jurisdictions. Frequently there is more than one document expanding on the relationship between the learning that students should experience in the subject in question and the assessment that should take place.

In **Ireland**, the final or penultimate section of Leaving Certificate Curriculum Established specifications (depending on whether or not there is a glossary or appendices) is the Assessment section. This outlines how the aims, objectives and learning outcomes will be assessed for certification purposes. Recent specifications outline all assessment components, including the end of course examination and any coursework, where relevant. They also provide a breakdown of the allocation of marks for the various components. Assessment criteria outline what a low, medium and high level of achievement in the subject looks like within different assessment components. Whilst newly developed subjects follow a common template, there is scope for some variation, as appropriate to the subject in question. Subjects which contain one or more coursework components have separate Guidelines for Coursework Assessment which offer detailed guidance to teachers. In Leaving Certificate Applied module descriptors, assessment is approached differently. In the case of some of the most recently revised subjects, key assignments and/or assessment guidelines are provided.

Unlike current assessment practices in Ireland, assessment at upper secondary level in **Ontario** is mostly done internally whereby credits are awarded for successful completion of externally set, internally assessed courses; 70% of marks are awarded on the basis of assessment conducted throughout the course; 30% on the basis of a final course assessment which may be an examination. Credits are granted by a school principal on behalf of the Minister of Education for courses that have been developed or authorised by the Ministry.

Assessment in Ontario course specifications is broken down into basic considerations and achievement charts. The purpose of achievement charts is to provide a common framework that encompasses the curriculum expectations for all courses; to guide the development of assessment tasks and tools (including rubrics); to help teachers to plan instruction for learning and assist them in providing meaningful feedback to students and to provide various categories and criteria with which to assess and evaluate student learning. Achievement charts are divided into categories of knowledge and skills including Knowledge and Understanding; Thinking; Communication and Application. Achievement charts outline the knowledge and skills that students at various levels (between 50% and 100%) would be expected to demonstrate.

The approach to assessment in **Queensland** has changed in recent years. In the past, assessment was entirely internal. An element of external assessment has been introduced which contributes to 25% of a student's final subject result in most subjects, with the exception of the Mathematics and Science subjects whereby both external and internal assessment have equal weighting at 50% each. This is now quite similar to Ontario's weighting of marks across internal and external assessment. To support teacher judgement in internal (school-based) assessment, assessment specifications known as Instrument-specific Marking Guides (ISMGs) are provided for each internal assessment component. The ISMGs align with the assessment objectives of the respective subject and describe the qualities of student work for each internal assessment. ISMGs

also identify the relative contribution of each internal assessment to a student's overall subject result.

Similar to Queensland, schools in New Zealand have both internal and external assessment and there are two main types of standards – achievement standards and unit standards. Achievement standards are based on the New Zealand Curriculum and Te Marautanga o Aotearoa (the Māori curriculum) while unit standards are competency-based and usually assess a vocational skill. Achievement standards can be internally or externally assessed; unit standards are assessed internally. Assessment information is communicated in various documents such as Achievement Objectives by Learning Area (New Zealand Ministry of Education, 2007) and Progression documents such as Progression in the Learning Languages communication Strand (New Zealand Ministry of Education, undated). In addition, achievement standards are published for every unit within a subject. These outline the criteria for various levels of achievement and are articulated in a similar manner to learning outcomes. While there are no national subject specifications in New Zealand, documents such as Achievement Standards/ Criteria are intended to guide students and teachers as they prepare for assessment. Achievement standards are updated every few years and this affects how schools and teachers design their curriculum.

In specifications from **Wales**, the introduction to each of the four units in a GCE, AS/ A Level specification states how the unit will be examined. Overall, assessment is not explored in detail when the subject is assessed externally, such as in the case of Business and Mathematics. For subjects with an internal assessment component, assessment is outlined in greater detail. In the case of AS/ A Level History, this component is the investigation of an issue. Information in the assessment section of this specification includes advice for teachers on how to guide students on appropriate topics, approving proposals, conducting the relevant assessment and the percentage weighting of the various objectives. The role of the teacher in introducing non-examination assessment is also outlined, along with the marking and moderation process. In addition, an assessment section toward the end of the specification details assessment and contains an explanation and accompanying table outlining the objectives and weightings for each of the relevant units. Following this are two other sections which explain technical information about assessment and grading, awarding and reporting.

In Queensland, which has recently moved from 100% internal assessment to a combination of internal/external, there is a significant amount of detail in the section on assessment, perhaps reflecting a perceived need to support teachers to understand and feel confident in external assessment. This is arguably a good example of how curriculum culture can intersect with both the technical form of curriculum specifications and the supports provided.

In Scotland, as outlined at the beginning of this chapter, the current upper-secondary examination system consists of three years of learning (S4-6). The assessment consists of the teacher assessed National Qualifications 3 and 4, and the externally examined National 5, Higher and Advanced Higher. The latter three levels would be the most comparable to Leaving Certificate. Assessment approaches at this level in Scotland focus on 'breadth, challenge and application' (SQA, 2018 p.9). Course assessment involves two components consisting of an external written examination which includes questions and sometimes case studies which assess knowledge and understanding across the course. This is set and marked by the Scottish Qualifications Authority (SQA). In some subjects, another component is included such as a report-based assignment whereby students

research and analyse information and produce a report using given headings, not too unlike project work in numerous Leaving Certificate subjects. Within Scottish course specifications, there is considerably more detail about assessment than about teaching and learning, likely because the specification is produced by the Scottish Qualifications Authority (SQA), a body responsible for the assessment of students and is intended to support assessment.

## Appendices

As noted in table 18, most of the recently (re)developed Leaving Certificate Established specifications contain appendices, including glossaries with definitions of relevant terms, action verbs and/or core concepts used. Curriculum specifications in the other jurisdictions explored here all include appendices and/ or glossaries. While there are no glossaries in any of the recently revised Leaving Certificate Applied module descriptors, most have teaching and learning resources at the end of the document.

In **Ontario**, appendices are tailored for the relevant subject and course. For example, the recently developed course for First Nations, Métis and Inuit Studies (2019) has a glossary with definitions of terms specific to the curriculum context in which they are used, while the Grade 9-12 American Sign Language as a Second Language has a one paged document with a diagram to illustrate American Sign Language literary genres. The glossary in all **Queensland** specifications is more standardised and contains an in-depth list of definitions, similar to the glossary of action-verbs which is included in many Leaving Certificate specifications. The appendices in **Welsh A-Level** specifications have a glossary although some are more detailed than others, depending on the subject. The **New Zealand** Curriculum has a short one-page document in their glossary, which lists words and phrases in the Maori language and their English equivalents.

In **Scotland**, the main framework Curriculum for Excellence does not contain any appendices or glossary sections, although the course specifications, developed by the SQA do. For the Higher Course in Modern Languages, there are four appendices consisting of course support notes (which specify that they are not mandatory and intended to provide advice and guidance on approaches to delivering the course); a productive grammar grid for assessment at the five different levels of the upper secondary education in Scotland; a list of contexts, topics and topic development and a component scaling, which outline the marks allocated for various components and questions in the course assessment.

## Length of Curriculum Specifications

Recent curriculum subject specifications in Ireland (pre-2022) tend to be relatively short documents, with an average of 36 pages (the shortest being 27 and the longest 49 pages). By comparison, curriculum specifications in some of the jurisdictions explored here are considerably lengthier documents.

In Ontario, the Mathematics Curriculum, Grade 11 and 12 (2007) contains 160 pages, the English Curriculum, Grade 11 and 12 (2007) has 221 pages and the Social Sciences and Humanities Curriculum, Grades 9-12 (2013) has 408 pages, although the latter spans four years of learning rather than two. The length of these documents is due to the fact that Ontario curriculum specifications address entire **areas of learning**, rather than individual subjects, such as The Arts,

Science, Social Sciences and the Humanities. Furthermore, these curriculum specifications include a variety of **courses and pathways** within a particular subject.<sup>4</sup>

In **Queensland**, curriculum specifications have around 90 pages, depending on the subject, so while they are not as long (understandably) as Ontario's Area of Learning specifications, they are almost double the length of most Irish specifications. This is due to the inclusion of lengthy glossaries, which are around 20 pages long, as well as detailed information about various summative internal assessments, a key feature of the Queensland education system.

With respect to **Scotland**, course specifications by the Scottish Qualifications Authority tend to vary in length, usually with between 40 and 60 pages, but sometimes stretching to over 100 pages, such as in Chemistry (DATE). Unlike other specifications, a very small amount of detail is provided about the course content, as it is referred to in Scotland, while the majority of detail focuses on assessment.

In **Wales**, specifications developed by WJEC also vary greatly in length, however, unlike Scotland, course content, as it is also known in Wales, is given much greater focus while there is minimal detail on assessment in most specifications. For example, the GCE AS/ A-level Business (DATE) specification is 37 pages long, 26 pages of which are dedicated to course content, with one page outlining assessment while the Maths specification has 49 pages, which includes 30 pages of course content and two pages outlining assessment. There are also two appendices in this specification.

The GCE AS/ A Level History specification (DATE) on the other hand has 77 pages, with more than 50 pages dedicated to course content and a more detailed section on assessment than other subjects, mostly because there is an internal assessment component in this subject. In addition, WJEC produce sample assessment materials, an assessment objectives rubric which sometimes appear in the teachers guides.

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<sup>4</sup> Note that in Ontario, Universities focus on academic and professional programs while colleges focus on specific employment skills, career training and trades.

### 3.5 Supports for enactment of new or revised specifications

In addition to the main curriculum specification, all jurisdictions referred to in this paper provide supports and support documents for teachers. The supports provided vary from jurisdiction to jurisdiction and tend to be linked to a number of factors including whether or not there is a national curriculum in place or if schools have autonomy to design their own (such as in New Zealand and Scotland); the extent of internal/school-based assessment requiring teachers to assess student work, as well as the culture of that jurisdiction itself.

In **Ireland**, NCCA currently provides the following supports at senior cycle:

- Guidelines to support understanding and completion of coursework components
- Portfolio guidelines
- Text lists

The SEC currently provides the following supports:

- Coursework briefs
- Sample examination papers, generally 6 - 8 months before the first examination of a new or revised specification takes place
- Examination papers and marking schemes
- Chief Examiner Reports.

The Department of Education co-ordinates the introduction of new or revised specifications via implementation groups or steering committees and provides funding and support for:

- Face to face and online professional development and support materials by national agencies (PDST, PPLI)
- Face to face and online professional development and support materials by registered programme and subject associations (Teacher Professional Network associations).

As this paper is primarily desktop-based, comparison with the other jurisdictions explored here focuses on the supports and documents they make available online. However, as discussed in chapter 1, the 'meso' level (where curriculum documents are interpreted in the process of creating professional learning experiences and materials for teachers) is crucial in the interpretation, mediation, and translation of curriculum documents into supports for curriculum sense-making by teachers, as they enact new curriculum specifications via daily pedagogical interactions with students in classrooms. Research in Scotland (Biesta and Priestley Eds, 2014) demonstrates that over-elaboration of the curriculum, in the form of guidance documents (estimated to be in excess of 20,000 pages in the case of the Curriculum for Excellence) does not achieve the stated aim of supporting teacher clarity. It is clear that teachers need time together making sense of curriculum changes. This is discussed further in chapter 4.

In **Ontario**, in addition to subject specifications, supports are provided. These include

- *Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools* sets out the Ministry of Education's assessment, evaluation, and reporting policy and is intended to support inclusive classroom practices and school-based assessment.
- Sample achievement charts are provided for three subject areas. For primary and lower secondary students from Grades 1 – 8, sample achievement charts are provided for The Arts and for Science and Technology. A sample achievement chart is also provided for English at upper secondary English (i.e. grades 9-12). These charts identify four categories

of knowledge and skills (knowledge and understanding; thinking; communication; application planning and processing) and four levels of achievement in the particular subject.

- Resources for teaching and learning, which vary from subject to subject. For example, while there are no obvious online support materials for The Arts and Health and Physical Education, there are [numerous resources](#) on the Ontario Ministry of Education website for teachers of Mathematics such as documents and videos with sample course plans, resources and support for high-impact instructional practices and webinars etc.

The Ontario Ministry of Education aims to issue curriculum and supports as early as possible in advance of enactment to ensure teachers can be made aware of updates and prepare accordingly. Ministry-developed resources are made available to support all revised curricula as applicable, such as curriculum overview videos, key changes documents, long range plans, teaching practices guides, and parent/guardian guides. Educators also have access to professional learning opportunities, including ministry webinars, which are made available in advance of the curricular change implementation, on the Curriculum and Resources website. Webinar recordings can be accessed on the Supports for Learning eCommunity on the Virtual Learning Environment. The Ministry also partners with third-party education-focused organizations to provide educators and students with new classroom-ready resources and training. These organizations may provide resources such as lesson and assessment plans, workshops, educator videos and professional learning webinars.

To support teachers in **Queensland**, Queensland's Curriculum and Assessment Authority (QCAA) has a series of tabs on their website including:

- an overview of the subject which provides a subject summary
- the assessment components, weighting, the credits earned and if it contributes to the ATAR
- what students will learn
- how students are assessed
- where that particular subject can lead
- contact details for more information (email address and phone number).

This is quite similar to the information available in Ireland on [www.curriculumonline.ie](http://www.curriculumonline.ie). As is the case in Ireland, there is a link to the curriculum specification (in PDF format) and any relevant syllabus amendment notices. Resources are made available in advance of curriculum enactment and include

- Subject reports
- Subject fact sheets
- Categories and glossaries of cognitive verbs
- Various other resources including advice for parents, carers and for students learning at home.

Teachers can access additional resources in the Syllabus application in the [QCAA Portal](#). Some resources are not publicly available and can only be accessed by registered teachers. In addition, in relation to assessment, the following supports are available

- Sample assessment instruments
- Annotated sample responses
- External assessment resources.



In recent years, the QCAA have been reviewing and revising syllabi at upper secondary level. To support this, the QCAA provide a syllabus implementation resource which includes information about the review and revision process, ways to get involved, a timeline and FAQs. Other resources are also provided for teachers in the QCAA portal, which requires a login and is similar to sections on NCCA's website curriculum online, which requires a Teaching Council login. QCAA resources designed only for teachers were not accessible for the purposes of this research.

In **New Zealand**, there are no national subject specifications. The New Zealand Curriculum (2015) provides guidance for schools as they design and review their curriculum at local level.

To support them, the Ministry of Education and the New Zealand Qualifications Authority (NZQA) publish a range of documents including

- a series of Senior Secondary Curriculum/ Teaching and Learning Guides, published by the Ministry of Education.
- *Curriculum Achievement Objectives by Learning Area* is a document which outlines what secondary students should achieve in the various learning areas. This is published by the Ministry of Education.
- achievement standards, published by NZQA.
- assessment standards for each unit within all subjects, published by NZQA
- a document containing an 'assessment matrix and guidance', published by NZQA
- exemplar answer scripts for external assessment, published by NZQA.
- Curriculum Refresh – Vision for Young People and Te Ao Tangata – Social Sciences (2021), published by the Ministry of Education. This includes short statements about key knowledge, key questions and key learning experiences. From these, teachers are expected to design learning experiences that weave the three elements together.

In **Scotland**, while there is no centralised national curriculum at the upper secondary level (known as senior phase), a number of key supporting documents and frameworks are provided. The Scottish Government publish

- a series of documents entitled *Building the Curriculum* which provide advice, policy and guidance for different aspects of Curriculum for Excellence, for all stages of education
- a tool called Insight, aimed at teachers, schools and local authorities, to help them to identify areas of success and where improvements can be made for pupils in their 3 years of upper secondary education.

The Scottish Qualifications Authority (SQA) publish

- Course specifications at various levels, which focus primarily on assessment
- Information on coursework and understanding standards
- Past examinations papers

Note that the Scottish Qualifications Authority is being replaced by a new qualifications body in 2025 so it is possible that the current approach will change.

In **Wales**, in addition to the specification published by WJEC, their website includes Teaching and learning resources

- Training events
- Past papers

### 3.6 Chapter Summary

Comparing curriculum specifications from other jurisdictions with recently developed senior cycle specifications (published p2018 -2021) can provide policy learning relevant to decisions about what format a.k.a. technical form NCCA might use in designing specifications for subjects and modules in a redeveloped senior cycle. From the cross-section of international specifications explored in this chapter, it is possible to draw a number of conclusions, though other jurisdictions not explored in this paper may take different approaches.

- The technical form of the curriculum is influenced by the context in which it is developed, such as the jurisdiction's educational history, culture and traditions; the balance between internal and external assessment; the remit of the agency that develops it etc.
- The technical form of curriculum specifications across jurisdictions have become more uniform over time, particularly in the last 10-15years.
- Internationally, in the jurisdictions studied, there remains scope for differences between specifications depending on the subject or module in question.
- A greater level of scaffolding of learning outcomes is evident in most other jurisdictions, particularly where either internal assessment or a combination of internal and external assessment exist. This scaffolding varies greatly from jurisdiction to jurisdiction and subject to subject; sometimes it takes the form of sample questions, issues, problems, prompts or examples (in the case of Ontario) or suggested classroom experiences/ activities in the case of Scotland. In Wales, amplifications are provided, although this is only in certain subjects, such as Business Studies (DATE) while in Queensland some specifications, such as Biology (DATE) include a guidance column which runs alongside the column which details the learning outcomes.
- The detail provided to scaffold learning outcomes tends to be tailored to the subject in question and is often influenced by whether or not the learning will be assessed internally or externally. For example, where sample prompts, problems and questions are provided, this is usually intended to support school-based assessment and is not indicative of what might be asked in an external assessment. Where samples issues and examples are provided, these are intended to support and scaffold understanding of the intended learning, rather than restrict. In Ontario specifications, for example, it states that 'Both the examples and the teacher prompts are intended as suggestions for teachers rather than as an exhaustive or a mandatory list. Teachers can choose to use the examples and prompts that are appropriate for their classrooms, or they may develop their own approaches that reflect a similar level of complexity. Whatever the specific ways in which the requirements outlined in the expectations are implemented in the classroom, they must, wherever possible, be inclusive and reflect the diversity of the student population...' (REFERENCE)
- It is also important to note a clear trend evident in the jurisdictions studied, namely that scaffolding of learning outcomes appears to be designed to support teacher planning and internal school-based assessment and is not intended to be indicative of what might be asked or how questions might be framed in external written examinations and other assessment components.
- While this paper has considered current approaches to scaffolding learning outcomes used in each of the jurisdictions explored, it is worth noting that Scotland and Wales are both currently reviewing their curricular approach.
- The extent to which pedagogies are included in curriculum specifications and/or guidelines and the level of detail they provide varies hugely from jurisdiction to jurisdiction and from subject to subject.
- There is an emerging sense that additional support is required for enactment, particularly where school-based summative assessment exists. Further and ongoing consultation with teachers will help to establish the most appropriate supports for a redeveloped senior cycle.

- It is not always clear who the target audience for these documents is intended to be. In some jurisdictions' specifications, the language suggests that teachers are the intended audience, while in others the target audience seems to be all stakeholders.
- While there is no uniform approach across jurisdictions to the technical form of curriculum specifications, there are common features which include:
  - an introduction and/or rationale
  - aims and objectives
  - key skills or core competencies
  - a section on teaching and learning/ pedagogy
  - recognition of diversity among learners
  - strands of study
  - learning outcomes (scaffolded in a range of different ways)
  - approaches to assessment
  - description of achievement standards
  - a glossary of key terms and definitions.

In many ways this is similar, with some exceptions, to the hybrid approach to the technical form of curriculum specifications proposed by Luke, Woods and Weir, as outlined in chapter 1. Based on the review of jurisdictions in this chapter, it is suggested that the area most in need of further development is the scaffolding of learning outcomes in specifications and/or in additional supports.

As outlined earlier in this chapter, other jurisdictions have taken a number of approaches to this. Consideration of features from other jurisdictions is made from a policy-learning, not a policy-borrowing perspective. Of the approaches explored in this paper, three options to consider when deciding on the template for senior cycle curriculum specifications in Ireland include the use of:

1. overall strand expectations which clarify the learning, and detail what students will demonstrate as a result of engaging with the learning in that strand.
2. sample issues or examples or prompts (where appropriate), developed for the Irish context
3. a 'students learn about' column which provides significantly more detail than the column included in more recent senior cycle specifications (2018 – 2021) could provide greater scaffolding of learning outcomes.

Several development groups 'road tested' these three options/approaches to scaffolding learning outcomes during 2023. Overall strand expectations were drafted but development group feedback was that this negatively impacted on the integration of the strands and the relevance of cross-cutting themes, which are a design feature of many NCCA specifications. These development groups expressed concern that adopting 'overall strand expectations' could contribute to the fragmentation of learning. Sample issues, examples or prompts were also considered but feedback from development groups was that these should not be included in specifications as they could quickly become dated and irrelevant and could restrict opportunities to explore issues relevant to a local or national context. A clear preference emerged from these groups for the scaffolding of learning outcomes within specifications to take place by adding more detail to the 'students learn about' column in specifications, as applicable and suitable to the subject or module in question. During the course of their work, these development groups suggested that it would be helpful to identify cases where a specific learning outcome or group of learning outcomes may prove challenging and, in these cases, a one-page elaboration of the learning outcome(s) in question can be provided as a support for enactment of the specification. The scaffolding of learning outcomes needs to be approached carefully and with judicious application, as appropriate to nature of the subject, module or strand in question, and with a view

to achieving clarity without over-elaboration, as research shows that over-elaboration can have a range of detrimental effects on student learning. Feedback from these development groups indicated that, on-balance, it could be unhelpful to include more than one way of scaffolding learning outcomes within specifications, as it could reduce clarity and could lead to confusion or a spiral of specification.

Looking more broadly at supports for enactment across these jurisdictions, it is clear that supports provided in Ireland are broadly similar to those provided in Ontario and Queensland, though jurisdictions which have internal assessment components tend to provide more assessment materials to support teacher judgements about the quality of student learning. Ireland has a dedicated support service for teachers, Oide, a feature which does not appear to be in place in the other jurisdictions studied. Further and ongoing consultation with teachers will provide further insights into the most appropriate supports for a redeveloped senior cycle.

## 4. Research and teacher feedback in relation to the technical form of curriculum specifications for subjects and modules

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Chapter one has outlined over-arching theories in the field of curriculum studies and chapter two traces the evolution of our curriculum culture over time, particularly since the establishment of the National Council for Curriculum and Assessment (NCCA) as a statutory body. Chapter three explores the technical form of curriculum syllabi/specifications in Ireland and in a range of jurisdictions internationally. This chapter places particular emphasis on the theme of curricular coherence as related to educational change and uses two different lenses to consider its implications for the technical form of curriculum specifications in a redeveloped senior cycle. These two lenses are international research exploring learning outcomes – often viewed as a key tool in achieving curriculum coherence – and Irish teacher feedback on the degree to which recent NCCA curriculum specifications (2018 – 2021) have been successful in achieving coherence and delivering clarity.

### 4.1 A rationale for curriculum coherence

An exploration of the characteristics of high achieving systems suggests that curriculum coherence is crucial in successful educational change (Fullan & Quinn, 2016; Honig & Hatch, 2004; Newmann et al., 2001). A shared vision of the purpose and direction of the curriculum is vital as a foundation for building coherence (Sullanmaa et al., 2019; Manyukhina & Wyse, 2019). Lessons learned from similar research demonstrate that changes in curriculum need to be closely aligned and coherent with changes in policy and broad, system arrangements (Fortus et al., 2015; Allen & Penuel, 2015; Schmidt & Prawat, 2006). This implies that not only should there be alignment horizontally within the curricular documentation but that this alignment needs to extend right across the education system to pedagogy, inspections, continued professional development and initial teacher education. Misalignment of key aspects of curriculum can result in fragmentation, with different aspects of the curriculum working to different purposes. (Priestley, 2019). Maintaining curriculum coherence is complex and requires an iterative process of communication and reflection among all stakeholders throughout the development and enactment process (Sullanmaa et al., 2019). This chapter mainly explores how the technical form of a curriculum specification can achieve internal or horizontal coherence (i.e. the alignment of all

aspects<sup>5</sup> within the specification) to support teachers as they interpret, mediate and enact the curriculum via daily pedagogical interactions with their students.

## 4.2 Learning outcomes and their role in achieving horizontal coherence

Since the early 2000s, there has been a move in Ireland towards an outcomes-based approach to curriculum development, with learning being defined in terms of what students should know, understand and be able to do at the end of a course. Learning outcomes were first used in the rebalanced Junior Certificate subject syllabuses in the early 2000s. Since then, they have become a key feature of junior cycle, senior cycle and primary curriculum developments. As outlined in chapter 2, The National Strategy for Literacy and Numeracy (2011) called for curriculum statements at all stages of schooling to adopt a 'Learning Outcomes' design, in which the expected learning outcomes to be achieved are clearly stated. Using learning outcomes in the development of new curricula has placed emphasis on the knowledge, skills, values and dispositions students should develop, as well as focusing on the subject matter of the relevant subject or module. They also play a significant role in ensuring that the purpose of the phase of education in question, the aims and objectives of the relevant specification, the learning/teaching strategies adopted, and the assessment used are consistent with each other. In other words, their purpose is to contribute to curricular coherence; ensuring that the various elements of the curriculum are aligned with each other. Senior cycle specifications incorporate learning outcomes but are not exclusively outcomes-based. They currently also include a 'students learn about' column; senior cycle key skills; focus on developmental aspects of learning (in the related learning section and in their overall approach); and a focus on recognising, embracing and valuing diversity, in the aims and rationale and in their overall approach. These features reflect the many curriculum models (learning outcomes based, traditional content based, generic skills based, process-based/developmental, and critical theory based) outlined in chapter 1. It is the balance between and integration of these models and traditions which must be carefully calibrated in the template for the technical form of curriculum specifications and in the creation of the specifications themselves.

## 4.3 Curricular enactment and horizontal coherence

To inform its work on learning outcomes, NCCA commissioned *Learning Outcomes: An International Perspective* (Priestley, 2019). The study sought to learn from other jurisdictions

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<sup>5</sup> Since 2006 Senior cycle specifications strive for horizontal coherence by aligning the aims, objectives, rationale, key skills, learning outcomes and assessment within the technical form of the specification.

whose curricular policy has also shifted away from primarily focusing on specification of disciplinary content knowledge towards a more blended approach, as articulated in learning outcomes. This case-study explored the use of learning outcomes in five jurisdictions, namely Singapore, Ontario, British Columbia, New Zealand and Hong Kong. Prepared by Professor Mark Priestley and peer reviewed before publication, the paper acknowledges that there is widespread support within transnational policy circles for this shift in policy. It highlights the complexities associated with implementing this scale of change within education systems such as Ireland's, where teachers are accustomed to education framed in terms of what is to be taught, rather than in terms of learners and their learning, and where there are

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long-established conventions of mainstream schooling that reward the acquisition of disciplinary, [propositional] knowledge and [student] performance in external examinations (NCCA, 2019, p71)

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The case study warns that a failure to address the question of what knowledge is of most worth can result in curricular fragmentation. In this context an important question to address in the development of all curriculum specifications in a redeveloped senior cycle will be:

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What knowledge does an educated young person need to acquire in order to become a literate, critically engaged and effective member of a complex modern democratic society... and to flourish in life beyond school? (NCCA, 2019, p71)

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The international case studies (NCCA, 2019) note that when learning outcomes are used to specify knowledge in curricular documents, teachers are expected to incorporate pedagogical approaches that support students going beyond simply acquiring propositional knowledge. This is to enable students to develop deeper understandings, to make connections between different knowledge domains, and to be able to apply knowledge (NCCA, 2019, p72). To help students to achieve this, the case studies found that

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teachers not only have to increase their Pedagogical Content Knowledge (PCK), but, in many cases, disciplinary knowledge as well, in order to engage students in developing deep understanding and powerful knowledge (Biesta, 2014). Part of the process involves teacher sense-making in relation to new policy, something that successful systems like Finland have largely achieved in relation to their curriculum reforms (Pyhältö et al., 2018). Such processes enable teachers to construct meaning in relation to new curricular concepts, and to differentiate between new and existing practices; importantly, they enable teachers to enhance their theories of knowledge and practice, in turn providing the potential for more expansive engagement with new curricula.

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The case study highlights the importance of teacher professional agency and learning as they engage with new curriculum specifications. Much depends on the lens through which learning outcomes are viewed. If teaching and learning is the main lens, the focus is on how learning outcomes can best be used to plan for classroom interactions and interpreted to respond to

student needs. If accountability is the main lens, the focus is on how well cohorts of students achieve the expectations laid out in the learning outcomes. If external assessment is the main lens, significant complexities arise. Teachers' focus is generally on how they can have confidence that the ways they have mediated, interpreted, and translated the learning outcomes will prepare their students for the challenges of external assessments. Policymakers and examination bodies focus is on how well external assessments can give students opportunities to display what they know, understand and are able to do while also accurately identifying varying levels of achievement within and across cohorts against a selection of the learning outcomes. For teachers, all three lenses influence their practice, though with varying degrees of prominence depending on the individual's beliefs, their school and system ecology, and the influence of the wider culture, history and society.

Achieving clarity without over-elaboration is a constant challenge for the representative subject or module development groups creating draft specifications. In the high stakes environment of senior cycle, many teachers call for more detailed learning outcomes and/or guidelines which elaborate on the learning outcomes. Scaffolding of learning outcomes, in a specification and/or in support materials, can enhance teachers' learning and engagement with a new or revised curriculum specification and their confidence and sense of self-efficacy. It can provide reassurance to teachers who may be concerned that their interpretation of a new curriculum specification isn't the same as their colleagues, and/or who may worry that their students may not be adequately prepared for their examinations or have the capacity to apply their learning to unfamiliar problems or contexts. Scaffolding learning outcomes or providing guidelines may also go some way to reducing the likelihood that textbooks and examination papers become the de facto curriculum for the subject or module in question, though given their current impact on practice, they would likely remain significant. However, Priestley advises that

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*Any elaborations of Learning Outcomes need to be carefully formulated so that they support direct engagement with the 'big ideas'... and the purposes of education. Over-elaboration can have unintended consequences with them becoming tick-boxes for assessment or simply completion (Priestley, 2019, p6).*

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The potential unintended consequences of over-elaboration of learning outcomes identified by curriculum researchers also include fragmentation, incoherence, de-professionalisation of teaching, less adaptation of learning to suit the needs of learners and arguably, less equitable outcomes for students.

As noted in chapter 3, careful consideration must be given to the type of ongoing professional development and support necessary for teachers to fully engage with, interrogate and, in some ways, to own the changes that have been made to the curriculum. Simply agreeing with curricular changes – what Priestley and Minty (2013) termed first order engagement – is not enough to change practice; teachers need a deep understanding of the curriculum as a holistic multidimensional entity – second order engagement. Nonetheless, varied teacher beliefs about new and revised curricula are inevitable and will always exist, as each teacher engages with, interprets and mediates curriculum changes in their own way.



## 4.4 Teacher feedback on curricular documentation

NCCA curriculum development processes incorporate two consultations to gather feedback from teachers, education stakeholders and the general public. One consultation takes place on the background paper and brief which guides the development of a new or revised curriculum specification. A second takes place on a draft specification, and adjustments are made in light of feedback, as appropriate, in order to arrive at a final specification. Early enactment reviews of new subjects also take place, generally after one or two student cohorts have experienced the full two years of teaching, learning and assessment guided by that specification. Sweeping changes to specifications early on in the enactment of new specifications are not generally made, as jurisdictions which enact near constant changes risk alienating teachers and fragmenting learning before subjects have an opportunity to bed in. However, where feedback has suggested that clarity could be achieved by strengthening horizontal coherence, some changes can be made, with the approval of Council and the Minister for Education.

There have been six senior cycle specifications designed to a common technical form and approved by Council in the period from 2016 to 2019. The six specifications are for the subjects Politics and Society, Economics, Physical Education, Computer Science, Agricultural Science and Applied Mathematics. Draft specifications for Leaving Certificate Irish (L1 and L2), Arabic and Latin and Greek also received feedback during a public consultation in 2021/2022. Designed for a minimum of 180 hours of class contact time, all of these specifications are organised into strands with learning set out in the form of learning outcomes. To support teachers to be more confident in making decisions about what learning to pursue, more outcomes tend to be used to describe the learning in senior cycle specifications and they are less flexible and open ended than those used in junior cycle specifications. With a view to achieving clarity and coherence, a strand introduction is included, the knowledge is divided into sub-sections and a *Students Learn About* column gives some indication of what students will be learning in the sub-sections. Student assessment includes a final written examination and at least one coursework component worth at least 20% of the final marks. Feedback on these specifications was gathered through consultation on draft specifications and in the case of new subject specifications for Politics and Society, Computer Science and Physical Education through an early enactment review. Feedback on specifications is also received from a range of sources on a once-off basis. However, the feedback explored in this chapter is feedback received during public consultations and early enactment reviews, as this is broadly representative of all stakeholders.

Feedback suggests that a number of design features in the current technical form of senior cycle curriculum specifications have mostly been positively received, whilst others, particularly learning outcomes and assessment, have received mixed feedback and frequently, requests for more detail to be provided.

Design Features	Feedback from teachers on draft specifications and early enactment reviews of new subjects
Rationale Aims and Objectives	<p>Most teacher feedback expressed the view that these sections work well together to give clarity to</p> <ul style="list-style-type: none"> <li>● the policy on foreign language acquisition at senior cycle</li> <li>● the nature of Applied Mathematics</li> <li>● the nature of Computer Science at senior cycle</li> </ul>

	<ul style="list-style-type: none"> <li>• the nature of Economics at senior cycle</li> <li>• the essential learning in Arabic</li> <li>• the distinctive nature of learning a classical language (Latin or Greek)</li> </ul> <p>In Classical languages, it was suggested that the rationale could strengthen emphasis on connections to other subjects. In Irish, feedback was divided on the extent to which these sections work well together to achieve clarity. In the review of Computer Science, it was suggested that the pedagogies inherent in the Applied Learning Tasks are key to achieving the rationale, aims and objectives of the specification, which are broad in nature.</p>
<p>Overview and Structure</p>	<p>The way knowledge is delineated in the strands was welcomed and diagrams showing the interconnected nature of the knowledge specified in the strands was considered useful in achieving clarity in</p> <ul style="list-style-type: none"> <li>• Foreign languages</li> <li>• Agricultural Science</li> <li>• Applied mathematics</li> <li>• Computer Science</li> <li>• Economics</li> </ul> <p>On occasion, it was suggested that the interconnected nature of the strands needed to be made more explicit, and this was taken on board when moving from draft to final specification. In Irish, there were mixed opinions as to whether the layout, overview and structure of the draft specifications is clear. At L2, some feedback suggested that the interconnected nature of the strands isn't clear enough and that two of the strands may be difficult for some students studying L2 Irish. In the review of Computer Science, teachers reported that using the Applied Learning Tasks (ALTS) in strand 3 as the lens through which the course is experience was central to student experiences of the interwoven nature of the learning across the strands.</p>
<p>Learning Outcomes</p>	<p>A consistent theme in consultation feedback was that there is a lack of clarity in the learning outcomes in draft specifications, and that this would pose problems when planning for teaching and learning.</p> <p><b>Politics and Society:</b> feedback from an early enactment review of Leaving Certificate Politics and Society specification (2017) suggested adjustments to particular learning outcomes. This feedback was integrated into a revised specification (2019) to enhance coherence and clarity.</p> <p><b>Computer Science:</b> during the review, participants identified specific learning outcomes where greater clarity or slight amendments would be beneficial and/or where learning indicated as for HL only would be beneficial for all students to experience.</p> <p><b>Economics:</b> feedback included that some learning outcomes are underdeveloped and leave too much room for interpretation, particularly if no other guidance is available for structural planning.</p> <p><b>Irish T1 and T2:</b> many participants said that the learning outcomes were unclear, both in the focus of the learning and the language used. It was also suggested that the pitch or standard expected is unclear.</p>

	<p><b>Agricultural Science:</b> Feedback suggested that more detail in relation to assessment would be an important indicator of the effectiveness of using learning outcomes to frame student learning.</p> <p><b>Arabic:</b> The appropriateness of including a learning outcome in relation to the use of dictionaries was queried.</p> <p><b>Latin and Greek:</b> The learning outcomes were broadly welcomed. Some questions were raised about the definitions or parameters of certain words used in learning outcomes and the extent to which the learning outlined would support learners in pronouncing words and sentences accurately.</p>
<p>Assessment</p>	<p>The multi-modal approach to assessment was welcomed as it was seen to align well with the aims and rationale of revised leaving certificate specifications. However, further detail in relation to assessment was frequently sought. Current practice is to provide that detail in support materials (coursework assessment guidelines and sample examination papers), while the specification outlines the focus of assessment, the assessment components, a breakdown of the allocation of marks for the different components and for higher and ordinary levels, and assessment criteria reflecting a high, medium and low level of achievement for each component.</p> <p><b>Foreign languages:</b> The increased weighting for oracy aligns well with the aim and objectives of the foreign languages specifications</p> <p><b>Agricultural Science:</b> The two assessment modes align well with the other sections meaning students have opportunities to display evidence of a broader range of knowledge. (The knowledge, skills, values and dispositions related to practices within the subject which are essential to students' learning about the subject. The application of knowledge from the subject as well as knowledge of the subject)</p> <p><b>Applied Mathematics:</b> The second mode of assessment, the modelling project, aligns well with the other sections (aims, objectives and rationale) meaning students have opportunities to display evidence of a broader range of knowledge. (The knowledge, skills, values and dispositions related to practices within the subject which are essential to students' learning about the subject. The application of knowledge from the subject as well as knowledge of the subject)</p> <p><b>Economics:</b> The research topic gives students opportunities to display evidence of a broader range of knowledge. The knowledge, skills, values and dispositions related to practices within the subject which are essential to students' learning <i>about</i> the subject. The application of knowledge from the subject as well as knowledge of the subject)</p> <p><b>Irish:</b> The language portfolio was broadly welcomed as having the potential to support and document student progress in learning. It was suggested that there should continue to be a strong emphasis on developing students capacity to speak and interact in the Irish language and that the weighting for literature in the draft</p>

	<p>specifications be reduced, and the proposed weighing for oral be correspondingly increased.</p> <p><b>Arabic:</b> the proposed introduction of a portfolio for formative assessment and or oral and aural components was welcomed.</p> <p><b>Latin and Greek:</b> the weighing of components was welcomed but more detail in relation to the precise nature of question types proposed for the written paper was sought.</p> <p><b>Computer Science</b> (review): there is a high degree of alignment between all aspects of the specification, including the modes of assessment used for the ALTs, the coursework component and the final examination, which combines written examination and computer-based programming.</p>
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**Table 27:** Feedback from teachers on draft specifications (2016-2019) and early enactment reviews (2018 – 2022).

Consistent with evidence from the case studies in Priestley’s learning outcomes research (2019), feedback from teachers suggests that the way Learning Outcomes currently articulate knowledge in curricular documentation is the most challenging aspect of current Leaving Certificate specifications, this has implications for the technical form of curriculum specifications in a redeveloped senior cycle.

As already noted in chapter 1 and chapter 3, the extent to which pedagogies are – and should be – implicit or explicit within learning outcomes and in the wider specification is contested and varies greatly from jurisdiction to jurisdiction. As mentioned earlier, Ireland has not traditionally mandated specific pedagogies in post-primary curriculum specifications, though some pedagogies naturally lend themselves to the development of key skills. In order to recognise the complexities of the intersection between curriculum and pedagogies with teachers’ beliefs and professional judgement, as well as the benefits of dialogic conversations about classroom practices, the intersection between learning outcomes and pedagogies tends to be teased out as part of continuous professional development and during subject and whole school inspections. This approach is also consistent with research evidence that an *ideal* of fidelity is impossible to achieve (Ahl et al, 2022). Explicit detailed elaboration of pedagogies can be seen as helpful where it supports alignment between the intended curriculum and the pedagogies used to enact that curriculum. It can also be interpreted as implying distrust of teachers’ professional judgement, of ignoring the complexity of pedagogical decision-making in the classroom and the role of teacher beliefs in mediating the curriculum.

## 4.5 Chapter summary

This chapter explores research relating to the use of Learning Outcomes in curriculum specifications and reviews recent feedback from teachers on draft Leaving Certificate subject/module specifications. The following conclusions were drawn:

- Curriculum coherence in a broad sense is crucial in successful educational change. Alignment within all sections of curriculum specifications (horizontal coherence) needs to extend right across the education system to pedagogy, inspections, continuing professional development and initial teacher education (vertical coherence).

- Feedback from teachers suggests that clarity and coherence within the technical form of a specification is very important.
- Feedback gathered through consultation on draft specifications and early enactment suggests that several sections of a specification can contribute to clarity and coherence.
  - The **Rationale and Aims** can bring clarity to the nature and importance of the subject.
  - The **Strands of study** section can help to set out how knowledge is classified in the specification; with a diagram capturing the interconnected nature of that knowledge.
  - A **multi-modal approach to assessment** can align well with the aims and rationale.
- Learning Outcomes can play an important role in achieving curricular coherence but they also present challenges, particularly in the initial years of a new specification, where uncertainty in relation to assessment can impact on teachers confidence and sense of self-efficacy.
- Adjusting to planning for teaching and learning using learning outcomes can be challenging.
- Scaffolding of learning outcomes, in a specification and/or in support materials, can enhance teachers learning and engagement with a new or revised curriculum specification and their confidence and sense of self-efficacy. Over-elaboration of learning outcomes can result in fragmentation, incoherence, de-professionalisation of teaching, less adaptation of learning to suit the needs of learners and arguably, less equitable outcomes for students. It is important that a balance is struck between scaffolding on one hand and flexibility and choice on the other.
- Learning Outcomes in a redeveloped senior cycle should be scaffolded in a way that
  - provides clarity about *what* learning to pursue.
  - allows for curricular autonomy in *how* learning is to be pursued.
  - respects the professionalism of teachers to provide appropriate, relevant learning experiences for their students.

However, given the intense focus in Ireland on school leaving examinations and on what comes up in examinations, it is unlikely, irrespective of the level of scaffolding of learning outcomes provided in specifications and/or support materials, that tensions relating to assessment will be fully resolved by adopting a different approach to the technical form of curriculum specifications.

## 5. Knowledge, skills, and values/dispositions

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The Senior Cycle Review Advisory Report (NCCA, 2022) states that

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In the process of redeveloping senior cycle, an integrated approach to knowledge, skills, values and dispositions will inform the design of subject specifications and modules... Further deliberation will take place to review and identify the skills, values and dispositions that students will build upon from earlier stages of education and/or those they should develop during senior cycle through engagement with knowledge across various subjects and modules....Part of this process will include revisiting review feedback and the existing key skills of both junior and senior cycle, alongside consideration of how the guiding principles of senior cycle articulated above can inform the values and dispositions which can be developed within and across subjects and modules (NCCA, 2022, p29)

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NCCA subsequently commissioned Emeritus Professor Carol McGuinness, formerly of Queen's University Belfast, to present a research-informed review and analysis of key issues for NCCA to consider in developing an approach which aims to

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help every student to become more enriched, engaged and competent, as they further develop their knowledge, skills, values and dispositions in an integrated way (NCCA, 2022, p20)

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This chapter summarises the most important considerations emerging from Professor McGuinness' report. Note that the word 'competencies' is used as an overarching term describing the integrated development of knowledge, skills, values and dispositions. Questions relating to the use of language are explored in her report and further down in this chapter.

### 5.1 What research questions were asked?

The NCCA research brief for the report posed the following questions to be considered (though not necessarily in this order):

1. What does the research literature identify as the main opportunities and challenges when the curriculum frames learning using a competencies approach?
2. What overarching competencies are foregrounded in upper secondary education in 6 different jurisdictions, as comparators to Ireland?
3. Continuity and progression: How can overarching competencies in senior cycle make meaningful tangible connections with NCCA's curriculum frameworks for primary school and junior cycle and for their future learning?
4. What might a research-informed classification for key competencies in senior cycle look like?
5. Should different competencies be emphasised in different programmes, subjects and/or modules in senior cycle or can the same overarching competencies framework be used, irrespective of the combination of programmes/subjects/modules being followed?

McGuinness' report emphasises the importance of building on existing good practice, which is consistent with the Senior Cycle Review Advisory Report's emphasis on redevelopment:

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It must be remembered that the Senior Cycle is not beginning from scratch on this general curriculum question. There already exists a Key Skills Framework for Senior Cycle (NCCA, 2009) with aims and goals very similar to those for any new Senior Cycle student competencies framework. An important question for this report will be the extent to which this framework can be refreshed in the light of more recent developments, still be familiar to teachers and schools, yet act as a powerful driver for the redeveloped Senior Cycle (McGuinness, 2023, p4).

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## 5.2 What terminology best reflects feedback from senior cycle review and recent curriculum developments in Ireland?

Broader learning goals which move beyond the confines of traditional school subject boundaries are referred to by various different names, including 21<sup>st</sup> century skills, key skills, transversal skills, (new) literacies, Future Skills, key competencies, and general capabilities or capacities. These different names are not insignificant, as they carry different emphases and meaning. In addition to the development of personal characteristics like critical and creative thinking, communication, collaboration, self-directed learning, student agency and various literacies, they also embrace interdisciplinary themes such as culture and multiculturalism, digital literacy, citizenship and sustainability.

Feedback received throughout Senior Cycle Review (2017 – 2020) emphasised the importance of taking an *integrated* approach when helping students to develop their knowledge, skills and values/dispositions. McGuinness notes that

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Being explicit about the integrated relationship between knowledge, skills and values/dispositions and the consequential benefits for students' learning avoids the criticisms that are often levelled at a skills focus in a curriculum, that knowledge can be under-represented and undervalued. Their successful integration means that learners can potentially benefit in many different directions. For example, their knowledge and understanding can be deepened and they can be afforded opportunities to learn how to build knowledge as well as just to 'consume' knowledge. The application of knowledge can be sustained in pursuit of goals and challenges, and skills/values/dispositions can support students in making connections not only across their school learning but also to everyday contexts, in the here-and-now and in future work contexts (McGuinness, 2023, p16).

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Senior Cycle Review feedback also emphasised the importance of students' social and emotional development, and the importance of enhancing their ability to respond to and cope with challenging and novel or unpredictable situations. The complexity and ambition captured in the first sentence of the purpose of a redeveloped senior cycle – *to help every student to become more*

*enriched, engaged and competent, as they further develop their knowledge, skills, values and dispositions in an integrated way* – is consistent with the language of competencies, as outlined in the OECD's DeSeCo position paper

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- a competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context.  
(OECD DeSeco, Executive Summary, 2005, p. 4).

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For these reasons, the term 'competencies' is more appropriate than 'skills' in capturing the kinds of learning aspired to in a redeveloped senior cycle. It is also consistent with the hybrid approach to curriculum design explored in chapter 1. Recent European Commission projects also adopt this approach, though they refer to key competences rather than competencies. Mirroring the general move away from the language of 'key skills' is thus consistent with national and international developments.

There are two potential drawbacks to using the term 'competencies', however. Firstly, considered in light of the discussion of Ireland's curriculum culture in chapter 1, it could be seen as overemphasising competence to the detriment of enrichment and engagement, swinging the pendulum further towards Anglo-Saxon/American curriculum culture and away from Didaktik's emphasis on the more 'human' and less predictable purposes of education, such as socialisation, subjectification (personal development, becoming more fully oneself) and human wellbeing. However, it should be noted that a competencies approach recognises the importance of engagement, or more specifically motivation, via its emphasis on the disposition to behave in certain ways consistently, and as appropriate to the context in question. 'Competencies' also avoids the oft-critiqued tendency of Anglo-Saxon/American curriculum culture to overvalue knowledge and cultural capital because a competencies approach emphasises

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...what to do with the knowledge rather than the acquisition of the knowledge itself (McGuinness, 2023, p10)

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In addition, the overall purpose of a redeveloped senior cycle is broader than a single sentence relating to knowledge, skills values and dispositions, emphasising that senior cycle should continue to educate the whole person, serve collective as well as individual purposes and help students to access diverse futures.

The second drawback to using the term 'competencies' is that it will create a discontinuity of language and conceptualisation between junior and senior cycle, as junior cycle emphasises the development of key skills. However, the soon to be published Primary Curriculum Framework (2023) emphasises the importance for children and young people of developing *key competencies* and it is arguably wiser for older frameworks and specifications to be updated to reflect newer thinking, rather than aligning backwards towards older approaches and terminology.

### **What do the terms knowledge, skills, values and dispositions mean?**

In the process of redeveloping senior cycle, it is vital to have a shared understanding of the terms knowledge, skills, values and dispositions. Definitions of these terms were included in the Senior Cycle Review Advisory Report (NCCA, 2022) as follows:



## Knowledge

Knowledge can be described as '*encompassing established facts, concepts, ideas and theories*', including '*theoretical concepts and ideas as well as practical understanding based on the experience of having performed certain task*' (OECD, 2019, p3). A useful categorisation of knowledge organises it into **four** types:

1. disciplinary,
2. interdisciplinary
3. epistemic and
4. procedural.

Disciplinary knowledge, organised by subject disciplines or knowledge domains, can be an essential foundation and can help students to develop and acquire other types of knowledge and skills. Interdisciplinary knowledge enables students to identify connections and transfer concepts, skills and ideas across disciplines, potentially generating new insights, ideas or understanding. Epistemic knowledge refers to knowing what knowledge is; knowing what you know and can do; and how that learning came about. Finally, procedural knowledge refers to understanding how a task is performed, often by working through structured processes, and this can support students in solving complex problems. Students learn, use and leverage a range of skills, values and dispositions in the process of further expanding, deepening and demonstrating their knowledge and understanding.

## Skills

Skills can be described as '*the ability and capacity to carry out processes and to be able to use one's knowledge in a responsible way to achieve one's goal*' (OECD, 2019, p4). A useful categorisation of skills organises skills into three types: cognitive and meta-cognitive skills (for example, critical thinking, creative thinking and self-regulation); practical and physical skills (for example, using materials and tools, new information and technological devices); and social and emotional skills (for example, empathy, responsibility and collaboration). Skills, alongside knowledge, values and dispositions, are developed and used in an integrated and co-ordinated way, often in response to a specific task or demand or to work towards a particular goal.

## Values and dispositions

Values can be described as '*the beliefs that a person holds about what is desirable – for themselves and for society more generally*'. (McGuinness, 2018). Dispositions can be described as '*the tendency for a person to act in a certain way in given circumstances*'. Dispositions are linked to values, as people are often disposed to act in a certain way because of their underlying values and beliefs. Dispositions are also connected to skills. One shorthand description of dispositions is having '*a will as well as a skill*'<sup>Error! Bookmark not defined.</sup> to attempt or achieve something. Dispositions are equally connected to knowledge, as the thinking and learning dispositions that students develop have the potential to enrich their learning as they engage with knowledge across various disciplines. There are many ways of organising and categorising values and dispositions, which can encompass personal, social, societal and human values and dispositions, for example.

McGuinness' report (McGuinness, 2023, p15) offers a more readable definition of these terms:

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**Knowledge:** refers not just to bodies of established disciplinary knowledge (facts and figures, concepts, theories) but also to interdisciplinary knowledge,

epistemic knowledge or ways of knowing and associated truth claims, and knowing *about* how to do something (not quite the same as being skilful, see below).

**Skills:** being skilful at something refers to the ability to carry out some process with a degree of proficiency, indicating that there is a developmental aspect to skills. Skills can be developed in different areas – cognitive/metacognitive, social/communication, and physical/psychomotor. It also can apply to the ability to apply knowledge to achieve goals.

**Values/dispositions:** Values refer to underlying beliefs that people hold about what is desirable, for themselves and for society more generally. Dispositions refer to the tendency for a person to act in a certain way in given circumstances, indicating that as well as being able to act skilfully a person must be motivated to do habitually and know in what circumstances it would be appropriate to do so. Values and dispositions are linked as people are often disposed to act because of their underlying values and beliefs. Other terms are often used to capture this aspect of a competency, such as attitudes or mindsets.

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### What makes a competency 'key'?

McGuinness (McGuinness, 2023, pp16/17) argues that, in order to be considered 'key', a competence should:

- stand out as important for learning
- be important for all students and not a select few, for equity reasons
- be interrelated and work together to maximise their potential
- be developmental, learned and practised with increasing sophistication and complexity
- have wide application across different domains, opening up opportunities to make connections across learning

McGuinness notes that key competencies are most powerful in supporting student learning when the learner can see them in action, in the pedagogies they are experiencing and through their own reflections on learning. As students develop these key competencies, the aim is to enable them to tackle complex challenges.

## 5.3 What are the potential benefits and challenges when the curriculum frames learning using a competencies approach?

McGuinness focuses on three major advantages of broadening students' education via a competencies approach to learning. Firstly, it is argued that a competencies approach aspires to the kind of learning that is robust and connected enough to be used by students beyond the school context in which it was acquired. Exploring de Corte's extensive research into adaptive competence

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the ability to apply meaningfully learned knowledge and skills flexibly and creatively in new situations (de Corte, 2012, p47).

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McGuinness notes that this means learning more than subject knowledge and skills, it extends to

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[becoming] well practised in using a repertoire of what are termed heuristics or thinking plans and strategies. While these might first be encountered and learned in specific contexts, they have the potential to be more generally applicable across contexts... [and include] knowledge about how to learn, how to organise and manage oneself as a learner, underpinned by positive beliefs about oneself as a learner and about the to-be-learned material... [and] the role of the learner as an agent in their own learning (McGuinness, 2023, p7)

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The second advantage of broadening students' education via a competencies approach to education is that it better prepares students for the complex challenges of the modern world, challenges which are classified in The Future of Education and Skills: Education 2030 (OECD, 2018) as follows:

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**environmental** (including climate change, depletion of natural resources and the challenge of sustainability); **economic** (including innovation in science and technology, biodiversity, artificial intelligence, financial interdependencies leading to exposure to unanticipated risks and crises); **social** (including population growth, world famine, migration, urbanisation, cultural diversity, inequalities leading to conflicts, loss of confidence in traditional institutions) (McGuinness, 2023, p8)

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These problems are considered so complex and intractable, that, it is argued, they require

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a considerable shift to problem solving approaches of different kinds, greater reliance on creative and novel approaches, the ability to deal with complexity, tolerance of ambiguity, the ability to deal with contradictions, as well as resilience in the face of disappointment and frustrations (McGuinness, p8)

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McGuinness notes that individual and collective wellbeing is also increasingly seen as an important goal for education systems globally. From a human rights and social justice perspective, giving young people a voice in decision-making and the right to political participation is inadequate if they do not have the competencies they need to meaningfully participate and contribute to decision-making.

The third advantage of broadening students' education via a competencies approach to education is that it helps students to develop a range of personal attributes other than cognitive abilities, which impact positively on school achievement and later life outcomes. Research indicates that these include intrinsic motivation, self-efficacy, conscientiousness and self-regulation. McGuinness notes that

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Many of these factors have indirect effects on school outcomes through their influence on school attendance, study habits and general participation in school activities (McGuinness, 2023, p9).

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The OECD also recently conducted a survey called Beyond Academic Learning (OECD, 2021), examining the relationship between social and emotional skills, academic achievement and psychological wellbeing. They reported

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an intriguing and complex pattern of results. For examples, there was a dip in reported social and emotional skills as students enter adolescence, with 15 year olds reporting lower skills than 10 year olds. Specifically, there were dips in students' level of creativity and curiosity, and this was confirmed by parents' and teachers' views as well. The pattern for the relationship between school grades and social and emotional skills was mixed, with some skills, persistence and curiosity, positively related to school outcomes and others, such as stress resistance, creativity and sociability, negatively related.

(McGuinness, 2023, p9)

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To recap, the three major potential advantages of a competencies approach to the curriculum are:

1. robust learning which is connected to life outside of and beyond school
2. preparing students for the complexity and challenges of the modern world and
3. developing personal attributes which can contribute to academic achievement and overall life outcomes.

These reasons are both complex and compelling, yet competencies must be carefully conceived of and embedded in a curriculum, as a key competencies approach which replicates the attributes of the intellectual and ruling classes and makes them compulsory for all risks being itself an anti-democratic act of 'symbolic violence' (see Bourdieu, chapter 1) which seeks to homogenise the student population rather than respect individuality and diversity.

A range of other challenges have been identified in integrating a key competencies approach into a curriculum. Many jurisdictions have adopted a key skills or competencies approach in their curriculum documents, but these theoretical and policy shifts can have little impact on student learning, particularly where the focus and structure of the curriculum remains largely subject-based. In some cases, the desired skills/competencies have simply been named, and teachers have been asked to integrate development of these skills/competencies into their subject teaching but given no further guidance. In other cases (as with the Framework for Junior Cycle (2015) and all junior cycle specifications), an embedded approach is taken, whereby the key skills are integrated into each specification, with examples of where each skill may 'fit' into the subject, and key skills integrated into the learning outcomes. Nonetheless, as McGuinness notes, key skills/competencies

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can be limited because the competency becomes marginalised or invisible in the face of subject teaching imperatives. Additionally, the competencies become fragmented across subjects, their overarching intention gets lost, and students fail to make connections between experiences of practising the competency across different subjects and classroom experiences

(McGuinness, 2023, p13)

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The impact of teacher beliefs on what should be prioritised in student learning and providing time and opportunities for colleagues to work with each other to see the connections across subjects are also highly significant in bringing about change in the development of key competencies

across the curriculum. NCCA is commissioning further research into lessons learnt from other jurisdictions when integrating a key competencies approach to curriculum, to further inform work in this area.

## 5.4 What overarching competencies are foregrounded in upper secondary education in 6 different jurisdictions, as comparators to Ireland?

A key finding emerging from McGuinness' report is that no distinct classifications for individual phases of education were evident in the international jurisdictions she explored. Rather, key competencies tend to be

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...pitched at a level applicable to school learning across phases [with different] phases of education dealt with through statements of expectation for students' learning at each phase, articulated in progress maps, learning continua or profiles... NCCA's position with regard to asking for a distinct, and perhaps more tailored classification of key competencies/skills for different phases of school learning stands out as different in that regard (McGuinness, 2023, p14).

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There are three reasons why NCCA has not, to date, created one key competencies document to span across all phases of education. Firstly, it aligns with the co-creation process whereby NCCA reviews a phase of education through wide consultation with teachers, students, parents and stakeholders. Feedback from these reviews is then used, in combination with wider research, to design a key competencies (or in the case of Junior Cycle, key skills) document. The second is that the key competencies document designed aims to reflect nuances in relation to the ecology and developmental phase of education in question. The third has to do with timing, as the four phases of education (early childhood, primary, junior cycle, and senior cycle) tend to be reviewed and revised at different times, rather than simultaneously.

McGuinness' report compares key competency approaches from various supranational organisations, including the OECD's DeSoCo (2004) and Learning Compass (2019) approach, the US National Research Council classification (2012), UNESCO's International Bureau of Education Framework of Future Competences (2017) and the European Key Competences for Lifelong Learning approach (revised 2018), highlighting similarities and differences in the various different approaches they take. She then compares the approach taken in a range of jurisdictions, namely Northern Ireland, New Zealand, Wales, The Netherlands, Portugal, British Columbia and Ontario. She also maps the four NCCA key skills approaches across Aistear (2009), the Primary Curriculum Framework (2023), the Framework for Junior Cycle (2015) and Senior Cycle Key Skills (2009) to consider questions relating to continuity and progression. Tables 24 – 26 (McGuinness, 2023) at the end of this chapter capture these similarities and differences. Ultimately, McGuinness draws a number of conclusions from these comparative analyses.

### How can competencies usefully be classified?

McGuinness identifies three broad groups of competencies, namely:

1. **Personal characteristics** such as critical and creative thinking and problem-solving (**cognitive**); working with others and communication (**interpersonal**); and managing self and learning, including personal wellbeing (**intrapersonal**).

In the analysis of the jurisdictions, McGuinness concludes that the most consistent competency is the **cognitive** domain, encompassing critical thinking, reasoning, problem-solving, creativity and to a lesser extent, processing or managing information. Some jurisdictions include innovation, entrepreneurship, and acting/decision-making. Communication and collaboration/working with others are the most common **interpersonal** competencies included. However, a notable trend is the expansion beyond the personal, to include ways of participating and contributing more widely in society, social responsibility, and being culturally sensitive and aware. The most variety between the jurisdictions emerges when competencies within the individual – **intrapersonal** competencies – are described. The individual's relationship with learning is described variously as managing oneself as a learner; being personally effective; being self-directed and self-regulated; and setting goals for study and the future. The individual's relationship with the wider world is evoked as being able to assert and defend rights, as having a positive cultural and social identity, or as being able to make a positive contribution to society, which is similar to the trend of greater emphasis on civic responsibilities referenced under interpersonal competencies above. A final aspect of competencies within the individual is an emphasis on maintaining social-emotional, mental and physical wellbeing. Note that this is sometimes a cross-cutting theme or an area of learning in its own right, rather than a competency.

2. **Tools for learning:** often labelled as **literacies**. They include reading/writing, numeracy and digital literacy. Sometimes referred to as basic or foundational skills, they nonetheless go beyond the original expectations of the 3Rs, especially with the inclusion of digital and multimedia literacy. They have applications and expectations of student learning across the curriculum and thus fall within the scope of a key competencies approach. Language literacy, numeracy and digital literacy feature in all of the jurisdictions researched. They are sometimes framed as competencies, and sometimes framed as enablers of competencies, which both support the development of key competencies and are supported by key competencies themselves.
3. **Cross-curricular or transdisciplinary (big picture) themes and challenges:** this group includes a mix of transdisciplinary themes and newer areas of education, including citizenship education, educational for sustainability, and global competence. Whether they fall within the scope of current definitions of key competencies or are emerging knowledge domains in their own right, at a minimum they call for student learning beyond traditional subjects. Their focus is on preparing students for **participating and contributing on a broader societal front in the face of societal challenges** which have local, national and global implications.

This group includes challenges such as climate change and sustainability, local, national and global (in)equalities, technology, health and wellbeing (this is sometimes included under personal characteristics when the focus is on individual rather than collective wellbeing), and multiculturalism. Ongoing uncertainty and variation is evident internationally about whether to classify these as emerging disciplines and create discrete school subjects for them or whether to embed them as competencies spanning across all subjects. For example, in Ireland, a new Climate Action and Sustainable Development subject is currently being created. This could be interpreted

as indicating that sustainability does not need to be highlighted in a key competencies classification, but if this is the case, only those students who opt for this subject, and indeed have the option to study it, are certain of accessing learning in relation to it. The same is true of other big picture themes and challenges. On the other hand, finding ways to integrate these themes across all subjects also presents new curriculum design challenges.

### **What directions can a key competencies approach take?**

McGuinness points out that it is possible to develop a key competencies approach in a number of different directions. For example, UNESCO's IBE Future Competences project calls for a radical re-organisation of traditional disciplinary boundaries towards a transdisciplinary perspective while the European Key Competence Framework is more easily mapped to established curriculum subjects and areas. Both contain the three broad groupings of personal characteristics, tools for learning/literacies, and transdisciplinary themes and challenges. The OECD learning compass proposes transformative competencies which cut across these broad groupings and combine the relevant aspects of each for distinct purposes, such as '*to reconcile tensions, dilemmas and contradictions*' or '*to take responsibility*' (McGuinness, 2023, p22/23).

A significant challenge is whether to propose a competencies approach which is person-oriented or challenge oriented. A **person-oriented approach** focuses on helping the learner to make connections in their learning, whether within or across traditional school subjects, or across cross-disciplinary/transdisciplinary areas of learning. Tools for learning/literacies fit within this conception of competencies as they aid the learner to make the connections. A **challenge-oriented approach** focuses on the nature of the challenge (technological change, global citizenship) rather than on the skills/values/dispositions needed to respond to those challenges and suggests that existing school subject boundaries are inadequate. The question of equity also emerges strongly. If one or more of these big picture themes or challenges becomes a school subject, particularly in senior cycle, with students having more choices but studying fewer subjects or modules, many students won't be educated to meet these challenges in their lives beyond school. However, if they are integrated across all subject areas, alongside a range of other competencies, they may be side-lined for a variety of reasons, including access to relevant professional learning, time pressures and teacher beliefs. It may be possible to include short modules in a range of these areas and this will be explored in more detail separately to this work on the technical form of curriculum specifications, when exploring the further development and/or revision of subjects and modules in a redeveloped senior cycle.

McGuinness also points out that, while these dilemmas are challenging when selecting an approach to competencies in the curriculum, and

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key competency categories get pulled apart and dissected to understand their distinctiveness, in practice they work together when learners are faced with a learning challenge. For example, a student may be working on solving a problem (cognitive) as part of a group project (interpersonal) and will also need to manage their own learning in terms of persevering in the face of difficulty and perhaps managing feelings of inadequacy in comparison to others in the group (intrapersonal). No doubt also, the student will use of range of literacies – reading materials, perhaps interpreting numerical data, and searching the internet. The full power of a key competency approach for learning can only

be realised when they work together in this way  
(McGuinness, 2023, p32/33)

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McGuinness notes that whatever approach is taken

The overarching intention and purpose of a key competency framework needs to be made clear in curriculum design, teacher professional development, classroom practices, and especially to students. Only then is it likely to contribute to their lifelong and life wide learning  
(McGuinness, 2023, p42).

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## **5.5 How can overarching competencies in senior cycle make meaningful, tangible connections with NCCA’s curriculum frameworks for primary schooling and junior cycle and for their future learning?**

In creating a key competencies approach suitable for senior cycle, McGuinness notes that it is important

to ensure both a sense of continuity in learning as students transition from one stage of education to the next, and also ensure there is an appropriate shift in the level of challenge in the curriculum, so that learners do not have the experience of repetition and that teachers have appropriate expectations of what learners know and can do  
(McGuinness, 2023, p43)

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A movement from exploratory aspects of thinking and creativity to managing information and critical thinking is evident across phases. McGuinness proposes that a greater emphasis on creativity and innovation in Senior Cycle would be appropriate. The importance of communicating and interacting with others is consistent across all of the stages of education. Managing my learning, including reflecting on my learning, appears in all stages, though a focus on wellbeing is currently evident up to but not within the senior cycle key skills framework (NCCA, 2009). Identity, belonging and citizenship appear in various forms, with reference to rights and responsibilities in Aistear, the Primary Curriculum Framework (NCCA, 2023) and the Senior Cycle key skills (2009). In junior cycle, Civic Social and Political Education (CSPE) is included as a short course, rather than integrating citizenship as a cross-cutting theme or skill. Tools for learning – literacy, numeracy and digital literacy – are evident across all phases and are deemed to support learning across the other competencies. McGuinness notes that

the continuities are clear but the language is different. That might cause some confusion, with teachers not fully recognising that the same type of learning is being referenced using slightly different language, and/or that there is different emphasis at different stages  
(McGuinness, 2023, p50)

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In relation to progression in learning, McGuinness identifies the main challenge as ensuring that



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as students move through their school years [they] encounter new and more challenging learning (however defined), so that they can acquire and practice their competencies with increasing sophistication and maturity  
(McGuinness, 2023, p51)

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In one sense, finding the right 'pitch' may occur quite naturally, as

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the key competencies will be developed and practiced in the context of subject specifications, classroom lessons and tasks that would be typical for that phase of schooling  
(McGuinness, 2023, p51)

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While some jurisdictions attempt to be more explicit about progression within the competency across different phases of education, by including progress maps, learning continua or learning profiles, McGuinness urges caution about their inclusion, for a number of reasons, namely that

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There is a tendency to envisage progress as linear, with the most simple expectations for those in early years, and the most complex for those in senior cycle. There will be some reality to that but also some distortion, as anybody who has observed early years settings can witness, where children can readily co-operate and work together (at least sometimes), or work independently on a task that they find absorbing  
(McGuinness, 2023, p51)

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Rather she proposes an idea evident in many NCCA specifications of a spiral of learning

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where a level of mastery is reached in the context of a particular level of challenge. When that challenge is increased, then what previously seemed mastered can be inadequate, and new learning must be acquired and practiced, and so the spiral continues. This shift in challenge is most likely at the points of transition in a student's educational journey, where there are deliberate shifts in expectations about the cognitive demands of the curriculum, the social and emotional expectations of school learning, and the school environment itself.  
(McGuinness, 2023, pp51/52)

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## 5.6 What might a research-informed classification for key competencies in senior cycle look like?

A four-way classification of key competencies is proposed, relating to **thinking, interacting, managing learning, and participating in society**. The first three areas are consistent with the existing senior cycle key skills. The fourth – participating in society – is consistent with the purpose of a redeveloped senior cycle, which emphasises that senior cycle should serve collective as well as individual purposes in schools, other educational settings and in the wider society and help students to access diverse futures. It is also consistent with an increasing focus nationally and internationally on student agency and co-agency

recognising the importance of the distinction between enabling  
students to act both as an individual in their own interests and as part  
of a collective in the wider societal and global interest  
(McGuinness, 2023, p36)

McGuinness' report considers 5 of the 8 guiding principles of a redeveloped senior cycle to be particularly relevant to the proposed senior cycle key competencies: see table 24 below.

Aligning Guiding Principles and Proposed Key Competencies Classification	
Guiding Principles for Senior Cycle	Proposed Key Competency Classification
<p><b>Wellbeing and relationships</b> Students' experiences in school, in other educational settings and in wider society contribute directly to their holistic development. Students' experiences throughout senior cycle are supported in the relationships they have with teachers, peers, parents and other significant adults.</p>	<p><b>Ways of Interacting with Others</b> Interpersonal with the focus on learning in groups, with peers and teachers.</p> <p><b>Ways of Managing Own Learning and Self</b> Focus on wellbeing.</p>
<p><b>Inclusive education and diversity</b> The educational experience in senior cycle is inclusive of every student, valuing and respecting diversity and the contribution each student can make. Every student has enjoyable experiences in and meaningful outcomes from senior cycle education.</p>	<p><b>Ways of Interacting with Others</b> Interpersonal with a specific focus on values of diversity and inclusion.</p>
<p><b>Challenge, engagement and creativity</b> Students experience a challenging, engaging and high-quality education with opportunities for new and deep learning and for critical, creative and innovative thinking</p>	<p><b>Ways of Thinking</b> Cognitive, with a focus on deep learning, critical, creative, and innovative thinking.</p>
<p><b>Learning to learn, learning for life</b> Students develop greater independence in, and understanding of, how they learn; deepen their capacity to meet challenges of life within and beyond school; and have second-chance opportunities for learning and assessment.</p>	<p><b>Ways of Managing Self and Own Learning</b> Intrapersonal, with the focus on learning to learn, personal goals and self-efficacy.</p>
<p><b>Participation and citizenship</b> Students participate in schools, communities and society, exercising their rights and responsibilities as local, national and global citizens in ethical and sustainable ways.</p>	<p><b>Ways of Participating in Society</b> Focus on collective agency, beyond the personal.</p>

**Table 28:** Aligning Guiding Principles and Proposed Key Competencies Classification

McGuinness notes that in the senior cycle keys skills (NCCA, 2009) creativity is currently combined with critical thinking, which is more fully elaborated, but that it might be wise to give it greater prominence by including it as a key competency and potentially expanding it to include innovation and entrepreneurial thinking. The remaining guiding principles, while not explicitly reflected in the contents of the proposed key competencies classification, align with the broad aims of this approach to curriculum design.

Aligning Guiding Principles and Broad Aims of Key Competencies	
Guiding principles for Senior Cycle	Broad Aims of Key Competencies
<p><b>Choice and flexibility</b> Senior cycle facilitates broad learning and increased specialisation. It provides flexibility and coherence for students as they combine learning in a variety of ways, navigate their personal pathway through senior cycle, and pursue diverse futures</p>	Developing these key competencies across a range of subjects and modules and seeing connections between them should enhance the coherence of students' experiences of senior cycle.
<p><b>Continuity and transitions</b> Students build on their learning to date and are supported as they develop and pursue their chosen pathways, and as they transition to adult life.</p>	Developing these key competencies will benefit students as they transition to adult life and diverse futures.
<p><b>Learning environments and partnerships</b> Partnerships and collaboration across schools, with families, communities, and with other learning environments, including online, enrich and extend student learning and expand the possibilities open to them.</p>	Opportunities to develop these key competencies in a range of learning environments and for collective as well as individual purposes should enrich students' learning, help them to see the applicability of these competencies in a range of different contexts and expand the possibilities open to them, within and beyond school.

**Table 29:** Aligning Guiding Principles and Broad Aims of Key Competencies

McGuinness then explores to what extent the existing Senior Cycle Key Skills (2009) is consistent with a key competencies approach, which consists of three integrated structural components of knowledge, skills and values/dispositions. She notes that the focus on skills was consistent with the prevailing viewpoint at the time and that skills are foregrounded in these syllabi/specifications. In addition, the embedding of key skills in learning outcomes shows a clear expectation that skills and subject knowledge are integrated in students' experiences of the syllabus/specification in question. In taking this approach

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The risk is that, from the students' point of view, the key skills may become 'buried' in the subject teaching and their general application across-the-curriculum may be obscured  
(McGuinness, 2023, p39)

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There are clear continuities between the existing key skills of senior cycle and the key competencies classification proposed by McGuinness, as evident in Table 3 below. An outward-facing expectation that students should develop their competence as citizens, during senior cycle, would need stronger articulation. Participating in society needs to be incorporated, as this is core to the purpose, vision and guiding principles of a redeveloped senior cycle. While it does not appear in the existing key skills of senior cycle, it is very evident in the senior cycle vision of the learner which is embedded in all specifications from 2016 onwards. (see figure X below) which envisages that students participate in the social, community, national and international dimensions of their lives.

Mapping the Proposed Key Competency Classification with the Existing Key Skills	
Proposed Key Competency Framework for Senior Cycle	Previous Senior Cycle Key Skills Framework
<p><b>Ways of Thinking</b> Cognitive, with a focus on deep learning, critical and creative thinking and innovation</p>	<p><b>Information-processing</b>  <b>Critical and creative thinking</b></p>
<p><b>Ways of Interacting with Others</b> Interpersonal, with the focus primarily on learning in groups, with peers, teachers, family.</p>	<p><b>Working with others</b>  <b>Communication</b></p>
<p><b>Ways of Managing Own Learning and Self</b> Intrapersonal, with the focus on personal goals, learning to learn, personal agency, wellbeing and holistic development.</p>	<p><b>Being personally effective</b></p>
<p><b>Participating in Society</b> Focus on developing a collective agency, beyond the personal, with the purpose of developing competence to participate as a citizen, locally and globally.</p>	<p>No specific mention in key skills framework but included in the vision of the learner.</p>

**Table 30:** Mapping the Proposed Key Competency Classification with the Existing Key Skills

McGuinness notes that, while there is little mention of values/dispositions in the existing senior cycle key skills, the vision of the learner expanded upon under four headings (resourceful, confident, engaged and active learners) includes several values/dispositions, such as curiosity, open-mindedness, connecting learning, commitment to learning, coping with setbacks, and self-efficacy. Indeed, this vision of the learner includes many components which appear in key skills or key competencies approaches in other jurisdictions and in supranational key competencies frameworks. There is also little mention in the senior cycle key skills (NCCA, 2009) of digital literacies/competence, nor are digital tools recognised as potentially helpful and harmful to and for learning. McGuinness notes that a direct focus on digital competence would recognise its importance as a tool for

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interrogating information, problem-solving, communicating with others, and recognising its power in society more generally (e.g., remote working, identifying and coping with disinformation). Students may be learning this elsewhere in the curriculum and, if so, explicit connections need to be made with key competencies  
(McGuinness, 2023, p42)

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Commenting on the duality of key competencies, McGuinness notes that

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key competency learning needs to face in two directions at once, towards deeper understanding and application in the context of subject teaching, but also in the direction of skills/values/dispositions so that they become more visible to the students. Students need to recognise that they are acquiring and gaining expertise in practicing these skills, so that they develop the habit of doing so, and recognise their importance beyond the immediate context in which they were first encountered. Only then can the transfer potential of key competencies be realised for student learning. In the long run, this is a pedagogical issue but it needs to be made clear at the level of curriculum design as well.  
(McGuinness, 2023, p55)

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In concluding comments, McGuinness' notes the importance of a shared language and understanding of terms like key competencies and their component parts of knowledge, skills and values/dispositions. The potential benefits of a competencies approach to curriculum design are re-iterated, as are the challenges. The relative consistency across the various sources consulted to conceptualise and propose an organising structure for key competencies in a redeveloped senior cycle is highlighted.

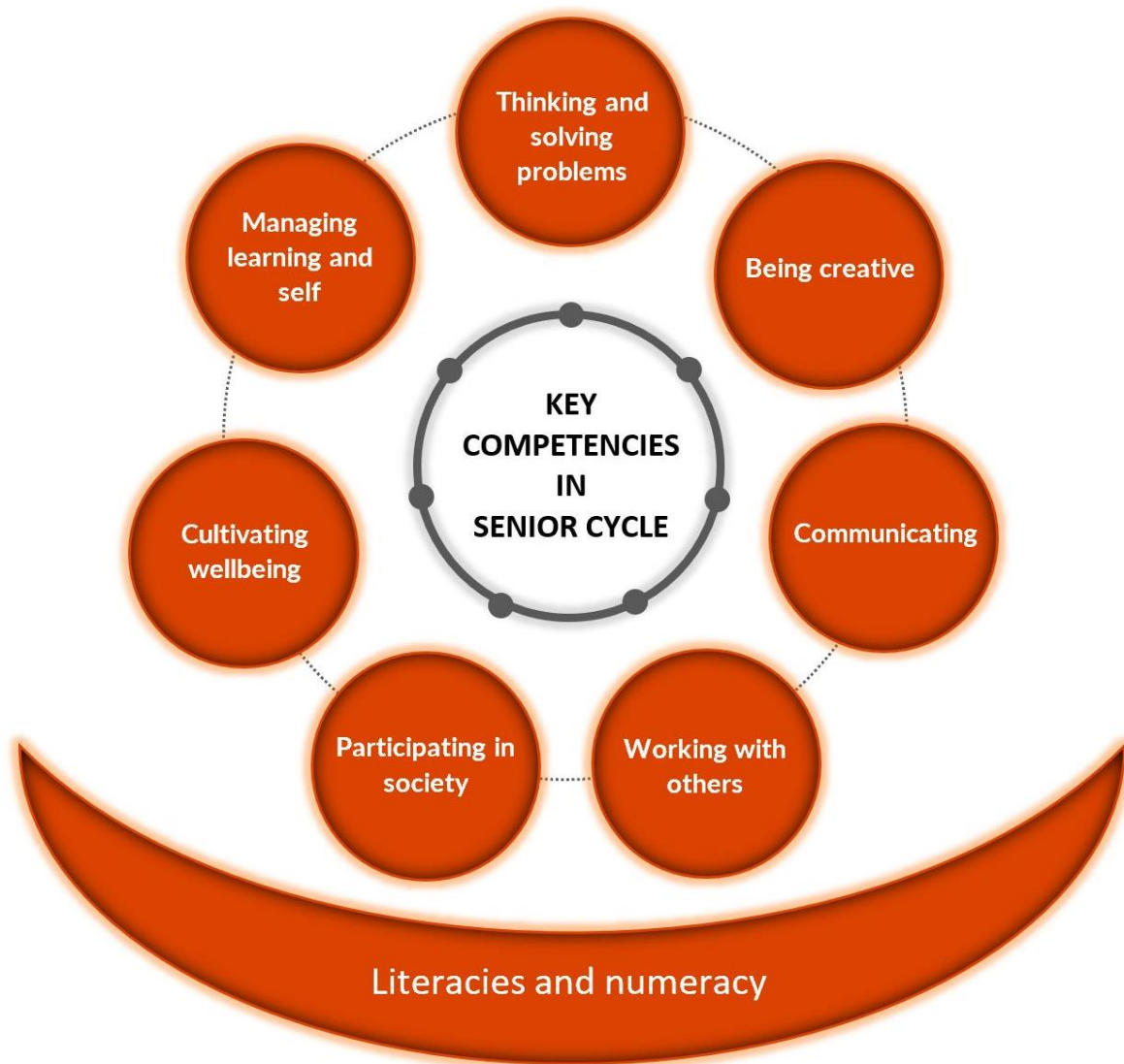
## 5.7 Chapter summary

Key competencies in a redeveloped senior cycle can build on the existing key skills of junior and senior cycle. The term 'competencies' builds on Senior Cycle Review (2017 – 2020) feedback of a desire to place a greater emphasis on the integration of knowledge, skills, and values/dispositions and is consistent with recent developments nationally and internationally and reflects. It should be noted however, that if students are to see and learn from the connections they make across subjects, this must be explicit in teaching and learning across not just within subjects and

modules. The development of key competencies can be advantageous to students in a range of ways. It can build robust learning with stays with students beyond the school context in which it was acquired. It can help to make them more aware and prepare them for the complex challenges of the modern world and for an uncertain future, as well as giving them a voice and recognising their ability to participate meaningfully in society. It can help students to develop personal attributes other than intelligence which help them during and beyond school, as they transition to adult life.

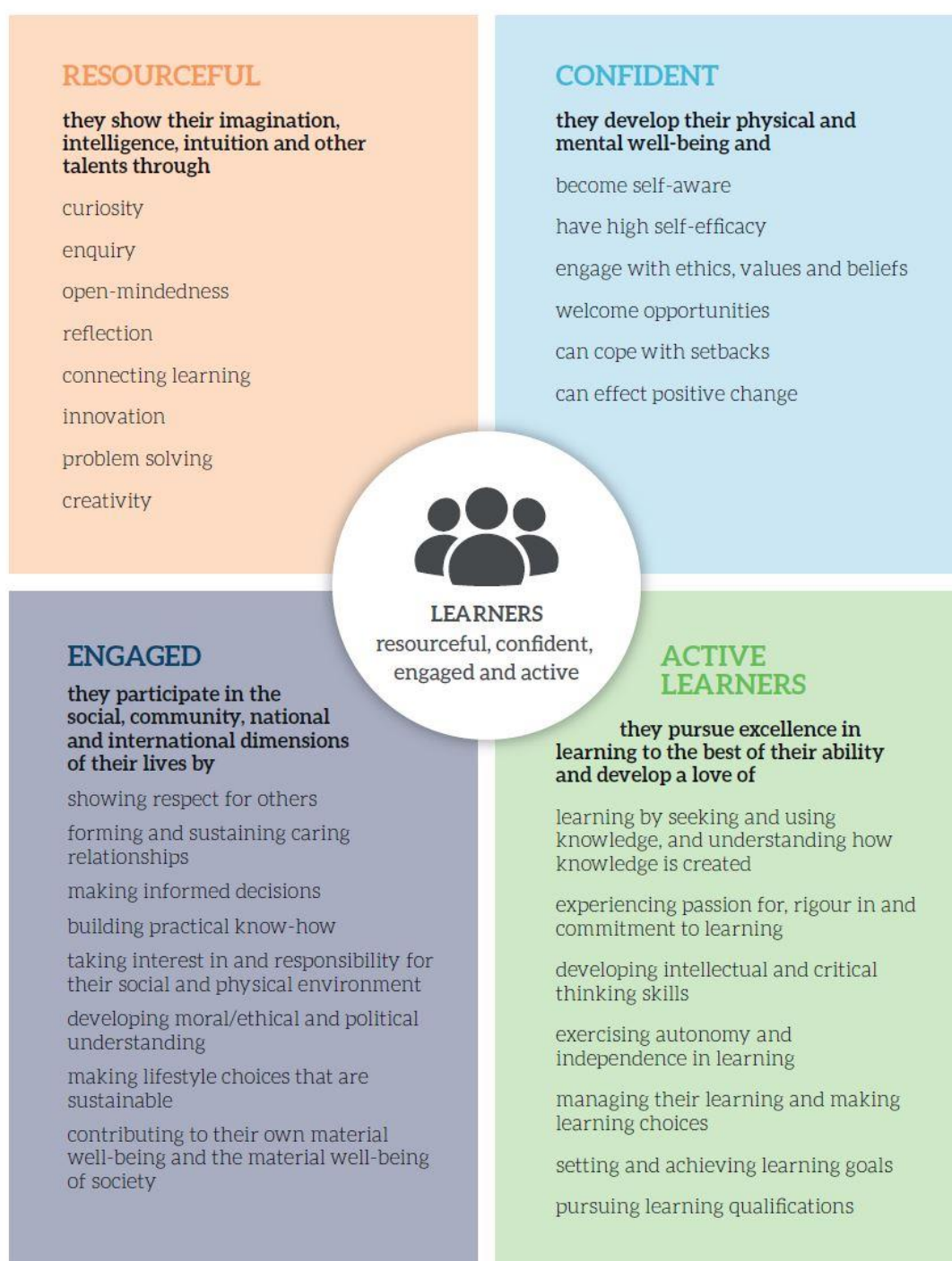
However, there are also a number of challenges which arise when conceptualising and integrating key competencies into a curriculum. If students are to see and learn from connections across subjects, these interdisciplinary connections must be explicit in teaching and learning across subjects and modules, rather than confined to exclusive focus on how the competencies are developed in individual subjects, thus fragmenting student learning. Simply naming the competencies is inadequate. Teachers must be supported and given guidance in their understanding of the key competencies and their potential benefits to student learning, as well as seeing how they integrate within **and** span across subjects and modules.

In order to create a key competencies matrix for senior cycle, a range of comparative analyses were undertaken. Competencies matrices in 5 supranational educational agencies/organisations and 8 international jurisdictions were analysed and compared. NCCA key themes (early childhood), competencies (Primary), and skills (Junior Cycle) were analysed across 4 phases of education and a proposed set of key competencies for a redeveloped senior cycle was created. Work was subsequently undertaken to utilise and adapt the proposed Key Competencies for Senior Cycle identified in McGuinness' research into a succinct list of competencies for use by development groups creating curriculum specifications. A key competencies document to replace the existing Senior Cycle Key Skills Framework (2009) has been published, for use by development groups, teachers, students and schools, as they enact a redeveloped senior cycle.



**Figure 7:** Senior cycle key competencies (2023)

## Appendices to Chapter 5



**Figure 8:** Vision of the learner in senior cycle specifications 2016 - 2021



Table 31: International Key Competency Learning Frameworks

DeSeCo (OECD) Key Competencies (2004)	US National Research Council Classification Pellegrino & Hilton (2012)	UNESCO International Bureau of Education (IBE) Framework of Future Competences (2017) Macro Competences	European Key Competences for Lifelong Learning (2018 Revised)	OECD Learning Compass (2019) Transformative Competencies (cuts across categories)
<p><b>Thinking</b> (considered to be at the heart of the other competencies)</p>	<p><b>Cognitive</b></p> <ul style="list-style-type: none"> <li>• Cognitive processes and strategies</li> <li>• Knowledge and information sources and biases, communication</li> <li>• Creativity and innovation</li> </ul>	<p><b>Lifelong learning</b></p> <ul style="list-style-type: none"> <li>• Creativity</li> <li>• Critical Thinking</li> <li>• Curiosity</li> <li>• Learning to learn</li> </ul>	<p><b>Entrepreneurship</b></p> <ul style="list-style-type: none"> <li>• Transforming ideas</li> <li>• Creativity</li> <li>• Critical thinking</li> <li>• Problem solving</li> <li>• Planning and managing projects</li> </ul> <p>(different types of thinking described in other areas as well)</p>	<p><b>Creating new value:</b></p> <ul style="list-style-type: none"> <li>• Focus on innovation and sense of purpose</li> <li>• Creativity</li> <li>• Critical thinking and problem solving</li> <li>• Curiosity and open mind-set</li> </ul> <p>(collaboration, manage risks, adaptability)</p>
<p><b>Functioning in groups</b></p> <ul style="list-style-type: none"> <li>• Relate to others</li> <li>• Cooperate in teams</li> <li>• Manage and resolve conflicts</li> </ul>	<p><b>Interpersonal</b></p> <ul style="list-style-type: none"> <li>• Teamwork and collaboration</li> <li>• Leadership</li> </ul>	<p><b>Interacting with others</b></p> <ul style="list-style-type: none"> <li>• Teamwork</li> <li>• Collaboration</li> <li>• Negotiation</li> </ul>	<p><b>Personal, social and learning how to learn</b></p> <ul style="list-style-type: none"> <li>• Collaborate in teams and negotiate</li> <li>• Able to seek support if needed</li> <li>• Empathize and manage conflict</li> </ul>	<p><b>Reconciling tensions and dilemmas, contradictions</b></p> <ul style="list-style-type: none"> <li>• Empathy and respect for different views</li> <li>• Creativity and problem solving for conflict resolution</li> </ul> <p>(cognitive flexibility, perspective-taking, making complex and difficult decisions, tolerance of ambiguity, sense of responsibility)</p>

<p><b>Acting autonomously</b></p> <ul style="list-style-type: none"> <li>• Act within the big picture</li> <li>• Form and conduct life plans and personal projects</li> <li>• Defend and assert rights</li> </ul>	<p><b>Intrapersonal</b></p> <ul style="list-style-type: none"> <li>• Intellectual openness</li> <li>• Work ethic, conscientiousness</li> <li>• Positive self-evaluation</li> </ul>	<p><b>Self-agency</b></p> <ul style="list-style-type: none"> <li>• Initiative</li> <li>• Drive</li> <li>• Motivation</li> <li>• Endurance/Grit</li> <li>• Resilience</li> <li>• Responsibility</li> </ul>	<p><b>Personal, social and learning to learn</b></p> <ul style="list-style-type: none"> <li>• Reflect on oneself, learn to learn</li> <li>• Effectively manage time and information</li> <li>• Manage one's own learning and career</li> <li>• Deal with complexity and uncertainty</li> <li>• Support emotional well being</li> <li>• Be health conscious</li> </ul>	<p><b>Taking responsibility (related to student agency)</b></p> <ul style="list-style-type: none"> <li>• Strong moral compass and locus of control</li> <li>• Sense of integrity</li> <li>• Self-awareness and critical self-reflection</li> <li>• Self-regulation</li> </ul> <p>(compassion and respect for others)</p>
<p><b>Using tools interactively</b></p> <ul style="list-style-type: none"> <li>• Use language, symbols and texts</li> <li>• Use knowledge and information</li> <li>• Use technology</li> </ul>	<p>(located in <b>Cognitive</b> section)</p>	<p><b>Multi-literateness</b></p> <ul style="list-style-type: none"> <li>• Reading and writing</li> <li>• Numeracy</li> <li>• Digital</li> </ul>	<p><b>Literacy</b> <b>Multilingual</b> <b>Mathematical, scientific technology and engineering</b> <b>Digital</b></p>	
		<p><b>Transdisciplinary</b></p> <ul style="list-style-type: none"> <li>• STEM, Humanities, Social Science</li> </ul> <p><b>Interacting in and with the World</b></p> <ul style="list-style-type: none"> <li>• Local and global</li> </ul> <p><b>Using diverse tools and resources</b></p> <ul style="list-style-type: none"> <li>• Sustainability</li> </ul>	<p><b>Citizenship</b></p> <ul style="list-style-type: none"> <li>• Act as responsible citizen</li> <li>• Participate in civic life</li> <li>• Awareness of global developments</li> </ul> <p><b>Cultural awareness</b></p> <ul style="list-style-type: none"> <li>• Communicate through a range of arts and other cultural expressions</li> <li>• Develop and express one's own ideas and sense of place in society</li> </ul>	

**Table 31** International Key Competency Learning Frameworks

**Table 32: Comparison of Key Competency Frameworks across jurisdictions**

Jurisdiction	Name of Framework	Framework				
		Cognitive	Interpersonal	Intrapersonal	Literacies	Cross curricular themes/transdisciplinary topics, 21st century challenges
<b>Northern Ireland</b>	<b>Thinking Skills and Personal Capabilities (2007) (ages 4-16) (some variation for ages 14-16)</b>	Managing information; Thinking, problem-solving, decision-making; Being creative	Working with others	Self-management	Communication Using number ICT	Citizenship, Media awareness, Sustainable development
<b>New Zealand</b>	<b>Key Competencies (2007) 5-19 years</b>	Thinking	Relating to others; Participating and contributing	Managing self	Language, symbols, text	
<b>Ireland (Senior Cycle)</b>	<b>Key Skills (2009) 16-18 years</b>	Information processing; critical and creative thinking	Communicating, working with others	Being personally effective		
<b>British Columbia/ Canada</b>	<b>Core Competencies (plus Curricular Competencies (2016) 6-17 years</b>	Thinking, creative and critical	Communication; Social responsibility	Positive personal and cultural identity; Personal awareness and responsibility	Literacy and Numeracy, ICT	Aboriginal Perspectives

				Social awareness and responsibility		
<b>Portugal</b>	<b>Exit Student Profile Competence Areas (2017 ongoing) 6-18 years</b>	Information and communication; Reasoning and problem solving; Critical and creative thinking;	Interpersonal relations; Communication	Autonomy and personal development; Body awareness and mastery, appreciate importance of physical activity for well being	Language and text (to include different languages, and other symbol systems); Scientific, technical and technological knowledge	Well-being, health and environment; Aesthetic and artistic sensitivity and awareness, different cultural expressions
<b>Netherlands</b>	<b>Netherlands Curriculum Review Broad Skills (2018/2019) 5-16 years</b>	Ways of thinking and acting: Thinking critically; Creative thinking/action; Problem solving thinking and action	Ways of interacting with others: Social and cultural skills; Collaboration; Communication	Ways of knowing yourself: Self-regulation; Entrepreneurial thinking and acting; Orientation to yourself, your studies and career	Digital literacy explicitly added as a learning area (see below)	Sustainability Globalisation Health Technology
<b>Wales</b>	<b>Curriculum Framework for Wales (2020) Integral Skills 3-16 years</b>	Creativity and innovation; Critical thinking		Personal effectiveness; Planning and organising	Literacy Numeracy Digital (mandatory)	Relationships and sexuality; Human rights education; Diversity; Careers and work related experience

						Local, national and international contexts
<b>Ontario/Canada</b>	<b>Transferable Skills (2020) 6-17 years</b>	Critical thinking and problem solving, Innovation, creativity and entrepreneurship	Collaboration, Communication	Self-directed learning	Digital literacy	Global citizenship and sustainability (included in their competency framework); Financial Literacy; Environmental Education; Social-emotional learning skills; STEM education

**Table 32:** Comparison of Key Competency matrices across jurisdictions

**Table 33: Linking NCCA Frameworks across phases of education from Early Years to Senior Cycle**

<p>Classification of Key Competencies (McGuinness, 2018) used as an organising scheme</p> <p>Knowledge Skills Values and dispositions</p>	<p>Aistear Framework: Themes and Aims (2009)</p>	<p>Key Competencies for Primary Curriculum (2023)</p>	<p>Key Skills for Junior Cycle (2017)</p>	<p>Proposed Key Competencies for Senior Cycle (2023)</p> <p>(Modified from existing Key Skills Senior Cycle Framework, 2009)</p> <p><i>Italics indicate values/dispositions elements of the competency.</i></p>
<p><b>Cognitive</b></p>	<p><b>Exploring and Thinking</b> Making sense, observing, questioning, investigating, understanding, problem-solving. Positive dispositions, curiosity, playfulness, perseverance, risk-taking.</p>	<p><b>Being Creative</b> This competency recognises children’s innate creativity. Children have creative energy and require lots of opportunities for creative behaviour. The focus is on nurturing and promoting children’s interests and opportunities for meaningful creative experiences through exploring, clarifying, and expressing ideas and feelings. Creativity is expressed in many ways, in all areas of human activity and culture, and involves originality. Creative learners are curious, open-minded, and imaginative. Through creative activity, children can produce works that are original and of value across the curriculum. As children develop this competency, they come to understand that creative activity involves enjoyment, effort,</p>	<p><b>Managing information and thinking</b> – being curious; gathering, recording and evaluating information and data; thinking creatively and critically; reflecting on and evaluating learning.</p> <p><b>Being Creative</b> – imagining; exploring options and alternatives; implementing ideas and taking actions, learning creatively</p>	<p><b>Ways of Thinking – Information processing</b>- gathering information and evaluating information and data from a range of sources, checking for reliability.</p> <p><i>Being systematic and well-organised, wanting to be well-informed.</i></p> <p><b>Critical thinking and problem solving</b> – examining patterns and relationships, analysing and making good arguments, making predictions and seeking evidence, analysing</p>

		<p>risk-taking, critical thinking and reflection. Unlocking and promoting children’s creative potential impacts positively on their motivation, self-esteem, and overall development.</p>		<p>problems and decisions, exploring alternatives and options.</p> <p><i>Being curious, being persistent and wanting to achieve well.</i></p> <p><b>Creative thinking and innovation</b> – exploring questions, ideas and actions, generating ideas, combining and synthesising ideas, enhancing products and other people’s ideas, experimenting with different designs, actions and outcomes.</p> <p><i>Being open-minded, learning from mistakes and failures, wanting to be creative.</i></p>
<p><b>Interpersonal,</b> including working with others, respecting others, communication, negotiating and influencing, managing and resolving conflicts.</p>	<p><b>Communicating</b> Non-verbal communication; language; creative expression; <b>Identity and Belonging</b> Expression of rights and understanding of rights/views of others.</p>	<p><b>Being a communicator and using language</b> (see below under Literacies)</p> <p><b>Being an active learner</b> This competency helps children develop an awareness of themselves as learners. It promotes the development of the knowledge, skills, concepts, attitudes, values and dispositions needed for being an active,</p>	<p><b>Working with others</b> – developing relationships and dealing with conflict; co-operating; respecting difference; contributing; learning with others;</p> <p><b>Communication</b> – using language; using number;</p>	<p><b>Ways of Interacting with Others</b></p> <p><b>Working with others</b> – working co-operatively in pairs, groups and teams; working towards collective goals; identifying responsibilities and different</p>

<p>Dispositions and values such as being respectful, wanting to be understood, being reliable and responsible.</p>		<p>agentic learner who can learn independently and with others. Children also learn how to communicate, set personal and collaborative learning goals, solve problems, and manage interactions with others. This competency involves children finding out about and making sense of people, things and places around them and in the wider world. Through developing this competency, children also learn to reflect on their learning. This competency taps into and nurtures children's innate curiosity and involves having opportunities to interact, investigate, question, and wonder. Learning with and about others supports children's wellbeing, as it creates a sense of belonging and connection, and builds awareness of the unique contribution that every child can make. Learning with and about others also enables children to develop empathy, an important capacity that allows them to tune in, to see and feel what another person is experiencing.</p>	<p>listening and expressing; performing and presenting; discussing and debating</p>	<p>roles in a group (e.g., leader, team member); developing good relationships with others and a sense of wellbeing in a group; negotiating and resolving conflicts; checking progress, reviewing the work of the group and personally reflecting on ones' own contribution.</p> <p><i>Being flexible and adaptable; showing respect for diverse views; taking responsibility for joint decisions.</i></p> <p><b>Communicating</b> – analysing and interpreting texts and other forms of communication; expressing opinions, speculating and discussing, engaging in dialogue, composing and performing in a variety of ways; communicating and mediating in online environments.</p>
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				<p><i>Listening and showing empathy; being open to diverse views; seeking to be clearly understood.</i></p>
<p><b>Intrapersonal,</b> including self – management of emotions as well as learning, self-regulation, personal flexibility, resilience, knowing strengths and weaknesses, plus the desire to improve, making an effort, believing in self-efficacy, learner agency</p>	<p><b>Well-Being</b> Being strong psychologically and socially, fit and healthy, creative and spiritual, positive outlook on learning and on life</p> <p><b>Identity and Belonging</b> Strong self-identity, seeing themselves as capable learners</p>	<p><b>Being an active learner</b> (see above)</p> <p><b>Being well</b> This competency develops children’s understanding and appreciation of wellbeing and their ability to be as healthy as they can be – physically, socially, emotionally, and spiritually. It fosters self- acceptance and self-awareness and promotes the importance of children seeing themselves as competent and resourceful. This supports their ability to deal with the normal challenges of life, become resilient, and cope in a variety of situations and circumstances. This competency helps children become healthy through physical activity, food, self-care, and interaction with nature. It helps children become positive and engaged in their learning and realise their own uniqueness and potential. It supports healthy relationships with themselves, their peers, their family, and the wider world. It also recognises the spiritual dimension of living, which enables children to experience a sense</p>	<p><b>Managing myself</b> – knowing myself; making considered decisions; setting and achieving personal goals; being able to reflect on my learning</p> <p><b>Staying safe</b> – being healthy and physically active; being social; being safe; being spiritual; being confident; being positive about learning; being responsible, safe and ethically using technology</p> <p>(see also <b>Wellbeing Framework in Junior Cycle</b>)</p>	<p><b>Ways of Managing Own Learning and Self</b></p> <p><b>Learning how to learn</b> – Developing and using metacognitive strategies to improve learning; reflecting on current approaches and making plans; considering how to combine approaches in creative ways.</p> <p><i>Developing mind-sets related to exercising agency over their own learning, a “can do” attitude, being prepared to make the effort and maintain a positive sense of self.</i></p> <p><b>Being personally effective</b> – able to appraise themselves, evaluate their own performance in discussion with others, receive and respond to feedback; identifying, evaluating and</p>

		<p>of awe and wonder and to know that life has a meaning.</p>		<p>achieving personal goals, as well as action plans.</p> <p>Building resilience in the face of challenges; taking initiative; developing, being flexible and being able to persevere when difficulties arise; becoming confident and being able to assert themselves as a person.</p> <p><i>Wanting to improve, taking responsibility, exercising personal agency.</i></p> <p>Enhancing the wellbeing of self and others – understanding the importance of emotional, social and physical wellbeing on everyday experiences and activities; developing awareness of how stresses and worries can affect wellbeing, identifying sources of advice and seeking help as appropriate; recognising the importance of physical activity and nutrition on wellbeing, making plans and</p>
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				<p>taking actions to achieve a good balance; knowing the importance of social interactions with friends, family, teachers on well-being and mental health and being prepared to reach out and help others; developing strategies to 'lift your mood' and maintain an optimistic outlook. Wanting to live responsibly and take actions to improve the wellbeing of self and others, having a sense of purpose and meaning.</p>
<p><b>21st Century Challenges</b> participating and contributing in a broader sense, citizenship, global awareness, awareness of economic and environment sustainability</p>	<p><b>Identity and Belonging</b> Group and community identity, life stories, expression of rights and understanding of rights/views of others</p>	<p><b>Being an active citizen</b> This competency fosters the knowledge, skills, concepts, attitudes, values, and dispositions in children that motivate and empower them as citizens to take positive actions to live justly, sustainably, and with regard for the rights of others. It helps children to question, critique and understand what is happening in the world within a framework of human rights, equity, social justice, and sustainable development. It also raises awareness of global challenges such as climate change, conflict, and growing inequalities. It places democratic practices at</p>	<p>See short courses <b>Civic, Society and Political Education</b> <b>Social, Personal and Health Education</b></p>	<p><b>Ways of Participating in Society</b> Investigating moral and ethical dimensions of developments, events and issues; Appreciating and practicing democratic values, for example, at school level; Exploring issues related to personal and social rights and responsibilities.</p>

		<p>the centre of the learning process. This competency develops children’s capacity and motivation for active and meaningful participation in society at local, national, and global levels, and fosters their ability to contribute positively and compassionately to creating a more sustainable and just world.</p>		<p>Developing a sense of connectedness to local, national and global communities and how to contribute to a more just and sustainable world; Carving out a role and sense of agency in society and for adult life.</p> <p><i>Developing and acting with a strong moral compass; exercising collective agency, wanting to make a difference.</i></p>
<p><b>Literacies</b></p>	<p><b>Communicating</b>                      Non-verbal communication                      Oral language                      Mark-making, recognising symbols, representing and expressing meaning through symbols</p>	<p><b>Being a communicator and using language</b>                      This competency develops children’s understanding and enjoyment of interacting with others. Being a communicator and using language means being able to understand, interpret, and use different forms of communication, including gesture, expression, language (which can include English, Irish, Irish Sign Language, and other languages), printed text, broadcast media, and digital media. It also involves children engaging purposefully in the creation and exploration of different text types<sup>3</sup>. Children need to be able to communicate and connect with others, in order to participate in wider society, share meaning and develop new</p>	<p><b>Being Literate</b>  <b>Being Numerate</b>  <b>Digital Technology</b>                      mentioned across all the above skills</p>	<p><b>Option 1</b> Include literacies (communicating, language, numeracy, digital) as supporting tools for the other key competencies.</p> <p><b>Option 2</b> Include literacies as a key competency in their own right.</p>

knowledge. Developing this competency increases children's confidence in using a range of media and methods of communication suited to different purposes and audiences. It is about children learning how to share their experiences, thoughts, ideas and feelings in a variety of ways, and learning how to observe, listen to, interpret, and show respect for the perspectives of others.

**Being mathematical**

This competency supports children to develop and apply mathematical thinking and logic to solve a range of problems. It involves having the confidence and skill to recognise and use mathematics in all aspects of life. Being mathematical involves children drawing on a range of knowledge, skills, concepts, attitudes, values, and dispositions as they recognise, interpret, and apply real-world information presented mathematically. Children need to be able to think and communicate quantitatively, to reason, to make sense of and critically engage with data, to have spatial awareness and to understand patterns and sequences. When opportunities for using mathematics across the curriculum are identified, children can transfer their mathematical knowledge, skills,

		<p>and logic to other curriculum areas and the wider world, enriching their experiences.</p> <p><b>Being a digital learner</b></p> <p>This competency supports children to become curious, creative, confident, and critical users of digital technology. Being a digital learner fosters children's ability to collaborate and thrive in a world increasingly immersed in technology. Children develop their knowledge, skills, concepts, attitudes, values and dispositions through problem-solving, experimenting and creating.</p> <p>Developing this competency increases their confidence in using a range of digital technology to harness their imagination and expand their creative thinking and creative expression. Through empowering children to be active digital citizens, this competency develops their responsible, respectful, safe, and ethical use of technology. It enables children to critically engage and contribute in a digitally connected and interdependent world.</p>		
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**Table 33:** NCCA Frameworks from Early Years to Senior Cycle

## Conclusions

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Given limited research into the *technical form* of curriculum syllabi/specifications, rather than the more extensive research literature devoted to questions related to the content, ideologies and orientations of curriculum documentation (see chapter 1), it is understandable why curriculum agencies use a combination of precedent, existing syllabi/specifications, learning from other jurisdictions, and feedback from teachers when deciding what technical form their curriculum syllabus/specification documents should take. This paper explored each of these factors while situating them within a theoretical, historical and cultural context. There is some clear learning for NCCA from this paper which is set out below.

Given the complexities of the various different ideologies, orientations, models and traditions of curriculum and the multiple purposes of senior cycle identified in feedback received during the Senior Cycle Review (2017 – 2020), it is proposed that the technical form of NCCA's specifications for subjects and modules in a redeveloped senior cycle should reflect a hybrid approach to curriculum design and should facilitate development groups to combine them in a comprehensive and coherent way. While a hybrid approach can be criticised for being 'theoretically agnostic' (Priestley and Biesta, 2014, p1), this approach is more inclusive of a range of teacher and stakeholder beliefs about curriculum; offers various 'ways in' to a new or revised specification; and builds on existing practice in curriculum development and enactment in Ireland. The technical form template must lend itself to this hybrid approach but beyond this, the work of achieving a careful balance between the different traditions/models/orientations and ideologies takes place

- in the iterative process of creating a specification and populating the template, with a view to achieving clarity and coherence, without over-elaboration, for teachers and other users of curriculum specification documents and
- in appropriately supported processes of enactment in schools, classrooms and other sites of learning.

As illustrated in chapter 2, historically, from the foundations of the state up to the 1980s, the technical form of curriculum syllabi in Leaving Certificate amounted to no more than a few pages, generally consisting of broad indicators of subject content/propositional knowledge, along with an outline of the sections that would appear on examination papers and in practical examinations. Over the last 40 years, since the creation of the Curriculum and Examinations Board (1984), later evolving into the NCCA, curriculum syllabi/specifications have increased in length and greater emphasis has been placed on clarifying the purposes of education; creating resonances within and across phases of learning and subject areas; being more explicit about the student learning aspired to, in the form of learning outcomes; emphasising the importance of developing a range of skills, and latterly competencies; and diversifying assessment to capture a broader picture of student learning. Gradually, a common technical form template for the development of syllabi/specifications emerged, though variations to allow for the specificities of individual subjects and modules remained.

A review of syllabi/specifications from upper secondary education in a range of other jurisdictions (chapter 3) indicates that there is no single approach internationally to the technical form of

curriculum specifications. While similar trends are evident, there is variation in the language and headings used and in the approaches taken. Common features include:

- an introduction and/or rationale.
- aims and/or objectives.
- key skills or core competencies
- recognition of diversity among learners.
- a section on teaching and learning, with some jurisdictions offering detailed advice on pedagogies and others offering a broad outline.
- strands of study.
- learning outcomes and scaffolding for learning outcomes, in a range of different forms.
- approaches to assessment.
- description of achievement standards.
- a glossary of key terms and definitions.

The extent to which pedagogies are included in curriculum specifications and/or guidelines and the level of detail they provide varies hugely from jurisdiction to jurisdiction and from subject to subject.

It is noteworthy that a greater level of scaffolding of strands of study and learning outcomes is evident in the curriculum syllabi/specifications of most other jurisdictions analysed in this paper compared to Ireland, particularly where either internal assessment or a combination of internal and external assessment exist. This scaffolding varies greatly from jurisdiction to jurisdiction and subject to subject. There is much that can be learned from the jurisdictions studied about scaffolding learning outcomes. It is also important to note a clear trend evident in the jurisdictions studied, namely that scaffolding of learning outcomes is intended to support teacher planning and internal school-based assessment and is not indicative of what might be asked or how questions might be framed in external written examinations and other assessment components. The aim appears to be achieving clarity without over-elaboration.

Looking more broadly at supports for enactment across these jurisdictions, it is clear that supports provided in Ireland are broadly similar to those provided in Ontario and Queensland, though jurisdictions which have internal assessment components tend to provide more assessment materials to support teacher judgements about the quality of student learning. Ireland has a dedicated national support service for teachers, Oide, a feature which does not appear to be in place in the other jurisdictions studied.

A very important aspect of the technical form of curriculum specifications is the issue of curricular coherence (chapter 4). Alignment between individual syllabi/specifications and the purpose, vision and guiding principles of a redeveloped senior cycle is very important. Internal alignment of all aspects of an individual syllabus/specification with each other is also crucial. Feedback from teachers indicates that they are broadly supportive of many aspects of how NCCA specifications are currently designed but that planning for teaching, learning and assessment with learning outcomes remains challenging and that more scaffolding of learning outcomes is needed. This scaffolding has the potential to

- enhance teachers' learning and engagement with a new or revised curriculum specification and their confidence and sense of self-efficacy.
- provide reassurance to teachers who may be concerned that their interpretation of a new curriculum specification isn't the same as their colleagues, and/or who may worry that



their students may not be adequately prepared for their examinations or have the capacity to apply their learning to unfamiliar problems or contexts.

- reduce the likelihood that textbooks and examination papers become the de facto curriculum for the subject or module in question, though given their current impact on practice, they would likely remain significant.

As outlined in chapter 3, there are a range of ways of approaching this scaffolding. A draft template was devised which was then 'road tested' with several development groups working on curriculum specifications for new and revised subjects and modules in a redeveloped senior cycle. A clear preference emerged from these groups for the scaffolding of learning outcomes within specifications to take place by adding more detail to the current 'students learn about' column in Leaving Certificate specifications, as applicable and suitable to the subject or module in question. In addition, during the course of their work, development groups can identify cases where a specific learning outcome or group of learning outcomes may prove challenging and, in these cases, a one-page elaboration of the learning outcome(s) in question can be provided as a support for enactment of the specification. Further and ongoing consultation with teachers will provide further insights into the most appropriate supports for a redeveloped senior cycle. Feedback from these development groups indicated that, on-balance, it could be unhelpful to include more than one way of scaffolding learning outcomes within specifications, as it could reduce clarity and could lead to confusion or a spiral of specification.

However, it is clear from research that over-elaboration of learning outcomes is risky as it can

- result in fragmentation of learning and incoherence,
- contribute to the de-professionalisation of teaching,
- result in less adaptation of learning to suit the needs of learners and arguably, less equitable outcomes for students.

Thus, it is important that a balance is struck between scaffolding on one hand and flexibility and choice on the other. The design of learning outcomes must be consistent with the overall aspirations of the phase of education. For example, if the learning outcomes are extremely detailed and numerous such that they encourage box-ticking approaches to classroom-learning, they could negatively impact on the guiding principles of a redeveloped senior cycle, such as *Challenge, engagement and creativity* and *Wellbeing and relationships*. Achieving clarity, synthesis and adequate detail without over-elaboration is an ongoing challenge which will impact on curriculum development as development groups discuss, debate and decide what learning is of most importance in the subject or module in question and populate the template for the technical form of curriculum specifications in a redeveloped senior cycle. Given the intense focus in Ireland on school leaving examinations and on what comes up in examinations, it is unlikely, irrespective of the level of scaffolding of learning outcomes provided in specifications and/or support materials, that tensions relating to assessment will be fully resolved by adopting a different approach to the technical form of curriculum specifications and/or support materials.

An evolving aspect of the technical form of curriculum specifications relates to the relationship between knowledge, skills and values/dispositions. An emphasis on the integrated development of a range of competencies (where knowledge, skills and values/dispositions work in tandem for the achievement of particular learning and/or goals) is consistent with feedback from Senior Cycle Review (2017 - 2020) and with developments nationally and across a range of supranational educational organisations and international jurisdictions. The proposed approach to key

competencies in a redeveloped senior cycle outlined in chapter 5 takes into account existing key themes (early childhood), competencies (Primary) and skills (Junior Cycle) across phases of education, including the existing key skills of senior cycle and wider societal challenges and developments. Senior cycle key competencies represent this more integrated approach to knowledge, skills, values and dispositions. They will replace the existing key skills of senior cycle and the vision of the learner and will be incorporated into the template for subject and module specifications.

The draft template below outlines the technical form to be used when developing specifications for subjects and modules in a redeveloped senior cycle. It may need to be amended or adapted as appropriate to the needs of those who experience senior cycle education; those who use curriculum documents to plan for teaching, learning and assessing in senior cycle; and across different subjects/modules and to support the introduction of more diverse pathways through senior cycle. The most significant changes from the current template are the inclusion of

- Updated text in relation to the purpose/vision of a redeveloped senior cycle
- Continuity and Progression replaces 'Related learning' in existing senior cycle specifications.
- Key competencies, emphasising the integrated development of knowledge, skills, and values/dispositions, replace the existing key skills of senior cycle and vision of the learner.
- The 'students learn about' column will offer more detail and scaffold learning outcomes
- Additional assessment component(s) accompanied by descriptors of quality for AACs
- A visual overview for students and parents may be included in specifications or provided as a support.

Further feedback on the template may arise during public consultations on draft specifications and this will be considered when finalising redeveloped senior cycle specifications.

## Template section-by-section overview

Section	What it will contain
Senior cycle	This section is common to all specifications. It outlines the overarching purpose, vision and guiding principles of a redeveloped senior cycle, which emerges from the Senior Cycle Review Advisory Report (NCCA, 2021). This section contributes to curricular coherence and provides a touchstone for development groups as they create specifications.
Rationale	This section is specific to each specification. The rationale outlines (a). the nature of the relevant subject/module. (b). the subject/module's role and importance in realising the purpose/vision of senior cycle i.e. how it contributes to students' intellectual, social and personal development. (c). establishes the subjects' importance in a larger context.
Aims	This section is specific to each specification. It broadly and succinctly outline the over-arching purpose of the specification, including a number of concrete bulleted aims.
Continuity and progression	This section is specific to each specification. It succinctly outlines some of the ways the subject/module contributes to - curricular continuity from junior cycle and - progression from school to adult life and enriches future studies, work, careers, and participation in society.
Key competencies	This section introduces the key competencies of a redeveloped senior cycle. It includes a brief explanation and graphic of key competencies and provides a hyperlink to further key competencies material.  Each specification then outlines some ways these competencies can be developed in the subject/module in question.
Teaching and learning	This section succinctly outlines some of a wide range of approaches to teaching, learning and assessment that teachers may find helpful when enacting this specification, and emphasises the importance of inclusive teaching practices. Supports in relation to pedagogies will be provided as part of continuing professional development.
Strands of study and learning outcomes	<b>Introductory paragraph</b> This section is specific to each specification. Introductory text outlines the overall approach to and structure of the subject/module, naming the strands, providing an overview graphic and a sentence re: time allocation. Information in relation to the design of learning outcomes for higher and ordinary level, as appropriate, is included here. Strand, learning outcomes and 'students learn about' sentences common to all specifications are included here.

**Strand X: Title**

Strand outline should include a brief outline of the essence of the strand.

**Stand X learning outcomes table**

The section contains a table with two columns. The right-hand column contains learning outcomes which outline the knowledge, skills, values and dispositions students should be able to demonstrate after a period of learning. They must be broad enough to allow all learners to achieve but specific enough that they can, for the most part, be measured and assessed.

The left-hand column outlines specific areas that students must learn about. This column will provide more detail than is currently the case in recently published senior cycle curriculum specifications, scaffolding understanding of the learning outcomes without over-elaboration. Taken together, these provide clarity and coherence with the other sections of the specification.

Learning outcomes should be numbered/labelled to support planning.

**Assessment**

**Assessment**

This section begins with generic text about the purpose of assessment broadly in senior cycle.

**Assessment for certification**

It includes generic text re: assessment for certification, followed by a subject/module specific table presenting the assessment components and weightings for written examinations and additional assessment component(s).

**Additional assessment component: [insert name]**

A broad outline of the purpose and nature of the additional assessment component is included here. It may include a graphic, as appropriate.

**Descriptors of quality for additional assessment component(s)**

Brief text and a table outline a high, moderate and low level of achievement in the additional assessment component.

**Written examination**

Common text followed by subject/module-specific bullet points.

**Reasonable accommodations**

Common text re: RACE scheme included.

	<p><b>Leaving Certificate grading</b> Common text and table re: grading included.</p> <p>The assessment section of the template may need to be adapted for redeveloped senior cycle modules.</p>
<b>Appendices</b>	<p>Appendices may include additional information relating to the senior cycle key competencies that are embedded in the learning outcomes of each subject and module. The appendices may also include a visual overview of key concepts/features of student learning in the subject/module. The audience for this visual is students and parents and its purpose is to support conversations about student learning in the subject/module in question.</p> <p>Additional appendices are specific to each specification. They may include a glossary of action verbs, a glossary of terms and other relevant material. Further appendices may be included as applicable to individual subjects/modules. These appendices scaffold a shared understanding of the language, verbs and terms used in the learning outcomes and the specification more widely.</p>

**Table 34:** Outline of draft template for the technical form of curriculum specifications for subjects and modules in a redeveloped senior cycle.

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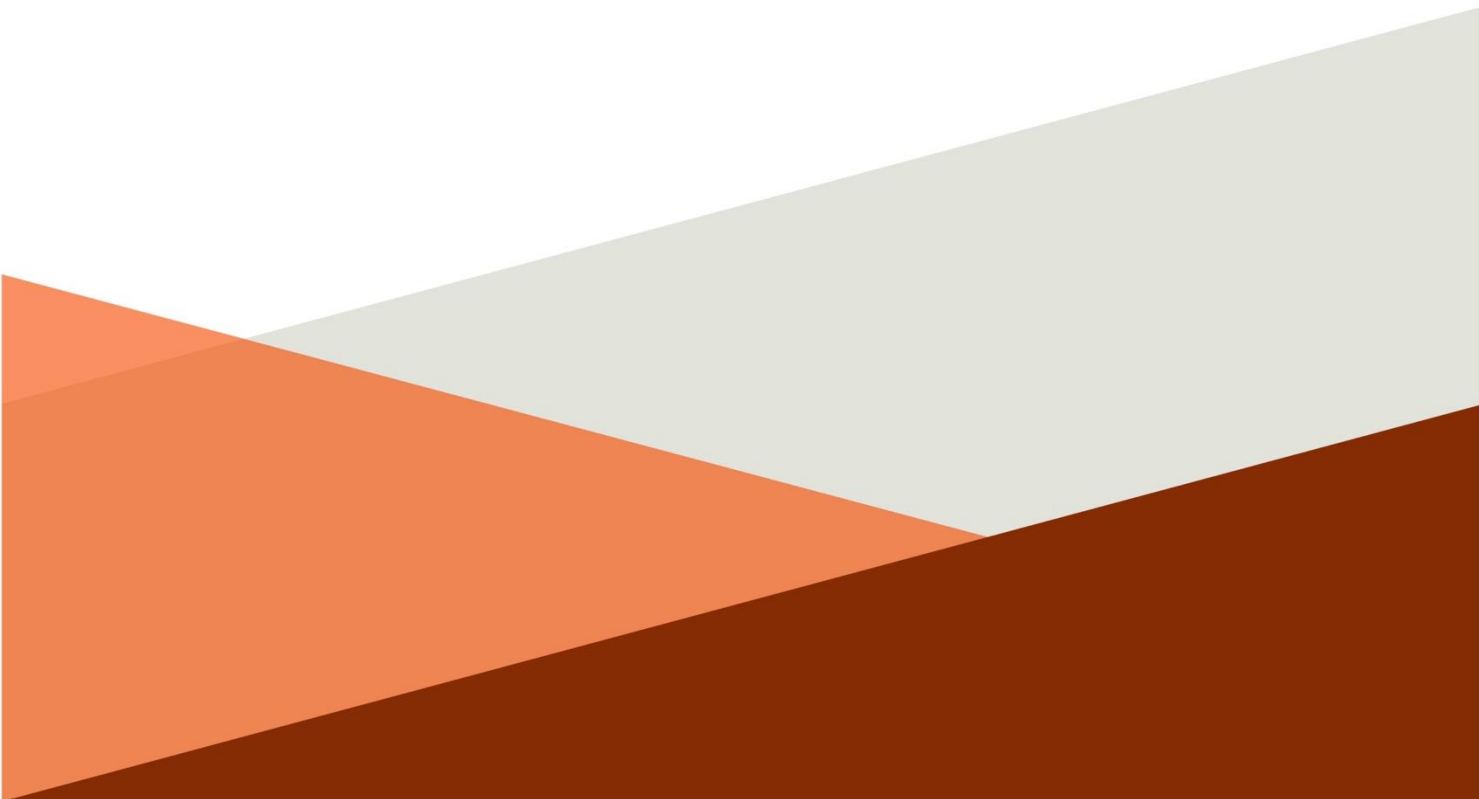
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