2 The design and implementation of Scotland's Curriculum for Excellence

This chapter analyses the design of Scotland's Curriculum for Excellence (CfE) and how it has been implemented since its inception in 2000. It analyses the progress made and potential gaps between the original intent and actual practice. The chapter starts with a description of CfE, follows with a review of its vision, its policy development in relation to student learning and progression from primary through to secondary education and Senior Phase, and its assessment. It examines the resources invested and concludes with a summary of issues for consideration.

Introduction

Scotland's Curriculum for Excellence (CfE), a remarkable curriculum initiative that was set in motion in the early 2000s, remains an inspiring curriculum policy in theory and practice in schools today. Its vision offers the rationale for rethinking curriculum intentions and shifting emphasis in teaching and learning towards a more holistic approach that encompasses knowledge, skills, attitudes and values held by society.

Since its inception in 2000, CfE has made progress. Primary schools had the opportunity to pilot CfE approaches before all schools started rolling it out in 2010/11 (Kidner, 2013[1]), followed by secondary schools. Between 2014 and 2016, students were awarded revised Scottish Qualifications Authority (SQA) national qualifications for the first time. The first student cohorts who studied following the CfE framework from start to finish (aged 3 to 18 years) recently completed compulsory education.

Two decades since its inception presents a fair amount of time and evidence for reflection on progress made from policy to actual practice. It is challenging to know, however, whether CfE's implementation has resulted in all students accomplishing its objectives since its realisation from 2010 onwards. The difficulty comes first from the nature of policy implementation itself: a policy design rarely translates into faithful enactment, as those involved in practice interpret and enact the policy differently (Viennet and Pont, 2017[2]). This challenge is all the more frequent with policies, such as CfE, whose principles encourage design flexibility at the school level. Such flexibility allows for perhaps different variations than originally planned in the policy. In addition, the metrics to understand its accomplishments remain elusive. Understanding progress made requires an analysis of the curriculum as well as the process followed for its implementation.

"Curriculum" is an elusive concept, with dozens of interpretations in literature (Jackson, 1992[3]). Essentially, curriculum can be seen as a "plan or design for learning", with many possible representations and at many levels of education (van den Akker, 2003[4]). The analysis, here, of the interplay between the intended and implemented curriculum will focus on the perceptions and experiences of the learners (as the ultimate audience of the curriculum), with connections to the roles of teachers as main curriculum actors.

From a policy perspective, curriculum development is a highly dynamic enterprise, driven by numerous ideological considerations, interests and expectations – of many groups (Viennet and Pont, 2017[2]; Gouëdard et al., 2020[5]). Consequently, many actors and factors influence the processes and results of curriculum change, which can be observed in school organisations, classroom realities and student experiences and outcomes (Fullan, 2008[6]; Levin, 2008[7]). Many such dynamic forces are addressed in Chapters 3 and 4 of this report. This chapter analyses how elements of policy design have played out in the implementation of CfE and what can be done in the future to enhance these.

The findings are structured along three levers of the OECD Framework on Education Policy Implementation (as introduced in Chapter 1 and Figure 1.1): the policy is driven by a vision, offers coherent policy actions, and is adequately resourced to be implemented in a sustainable manner. The curriculum spider web (Thijs and van den Akker, 2009[8]) is further used to analyse the various components of CfE and their coherence.

An overview of Curriculum for Excellence and its components

Curriculum for Excellence caters for children aged 3 to 18 years in Scotland (United Kingdom). Early learning, primary and lower-secondary levels are grouped under Broad General Education (BGE), while the Senior Phase covers the three years of upper-secondary education. Following much work on its development, it was implemented across primary schools in Scotland from 2010 onwards, then in secondary schools. The Senior Phase was phased in from 2013/14 to 2015/16 (Scottish Parliament -

Education and Skills Committee, 2019[9]). As an overarching description of CfE and its development is provided in Chapter 1, this section describes the different components that currently shape CfE for schools and teachers.

The vision for Curriculum for Excellence was formulated in 2004 around the "four capacities" that represent the essential purposes of Scottish education (Figure 2.1). Scotland further specified attributes and capabilities, which students can cultivate throughout their education, in order to develop the four capacities (Figure 2.2).

Figure 2.1. The four capacities of Scotland's Curriculum for Excellence

Source: Scottish Government (2019[10]) "Refreshed Curriculum for Excellence narrative", https://scotlandscurriculum.scot/ [accessed on 18 January 2021].

In September 2019, following the 2015 OECD review recommendation to "create a new narrative for CfE", a refreshed narrative for Scotland's curriculum positioned CfE in the current context, explaining that Scotland's Curriculum for Excellence helps children and young people gain the knowledge, skills and attitudes needed for life in the 21st century. The four capacities remain at its centre, enabling all young people to become successful learners, confident individuals, responsible citizens and effective contributors. These capacities are seen as:

- reflecting and recognising the lifelong nature of education and learning
- recognising the need for all children and young people to know themselves as individuals and to develop their relationships with others, in families and in communities
- recognising the knowledge, skills and attitudes that children and young people need to acquire to thrive in our inter-connected, digital and rapidly changing world
- enabling children and young people to be democratic citizens and active shapers of that world.

Besides aiming for "excellence", the word "**all**" (children and young persons) in the vision underlines that CfE also explicitly aims at equity. This dual focus is aligned with international best practice, but, as discussed later, not without challenges.

Curriculum is a wide concept in terms of the definition used in CfE. It is the totality of all that is planned for children and young people from early learning and childcare, through school and beyond. CfE covers the entire schooling route from age 3 to 18 years and ultimately aims at "positive and sustained destinations" (in higher and vocational education, in the world of work and in personal life) following the schooling years.

CfE puts the learner explicitly at the centre of the curriculum and refers to four diverse contexts for planning learner experiences: the ethos and life of the school as a community; opportunities for personal achievement; interdisciplinary learning; and curriculum areas and subjects.

In the CfE philosophy, schools and teachers are considered and empowered to make the decisions needed to provide a coherent, flexible and enriched curriculum that is adaptable and responsive to the diverse needs of individual learners, and which reflects the uniqueness of their communities. This suggests an approach that gives wide autonomy to schools and their teachers in curriculum design.

Another way of summarising the intentions of CfE (as stated in policy documents) is that children and young people's rights and entitlements are central to Scotland's curriculum, and every child and young person is entitled to experience:

- a curriculum that is coherent from age 3 to 18 years
- a broad general education, including well-planned experiences and outcomes across all the curriculum areas from early years through to S3
- a Senior Phase after S3, which provides opportunities to attain and achieve, including to study for qualifications, awards and other planned activities to develop the four capacities
- opportunities for developing skills for learning, skills for life and skills for work, with continuous focus on literacy, numeracy, health and well-being
- opportunities to maximise their individual potential, benefitting from appropriate personal support and challenge
- support to help them move into positive and sustained destinations beyond school.

In terms of the content of learning, within the overall framework, "Experiences" and "Outcomes" describe the expectations for learning and progression in all areas of the curriculum. It is the responsibility of schools and their partners to bring those experiences and outcomes together and apply the national entitlements to produce learning programmes across a broad curriculum, covering the subjects of: Science; Languages; Mathematics; Social Studies; Expressive Arts; Health and Well-being; Religious and Moral Education; and Technologies. In addition, throughout this broad curriculum, there should be an emphasis on the Scottish context, culture and history, and its place in the world.

According to CfE, this planning should demonstrate the following principles for curriculum design:

- challenge and enjoyment
- breadth
- progression
- depth
- personalisation and choice
- coherence
- relevance.

The Curriculum for Excellence framework intends to allow professional autonomy and responsibility when planning and delivering the curriculum. For example, there are no specific input requirements in terms of time allocations. The framework provides flexibility to organise, schedule and deliver the experiences and outcomes in ways that meet the needs of all learners and also provide reassurance about consistency

where necessary. Such flexibility is expected to result in more varied curriculum structures and arrangements to reflect local needs and circumstances.

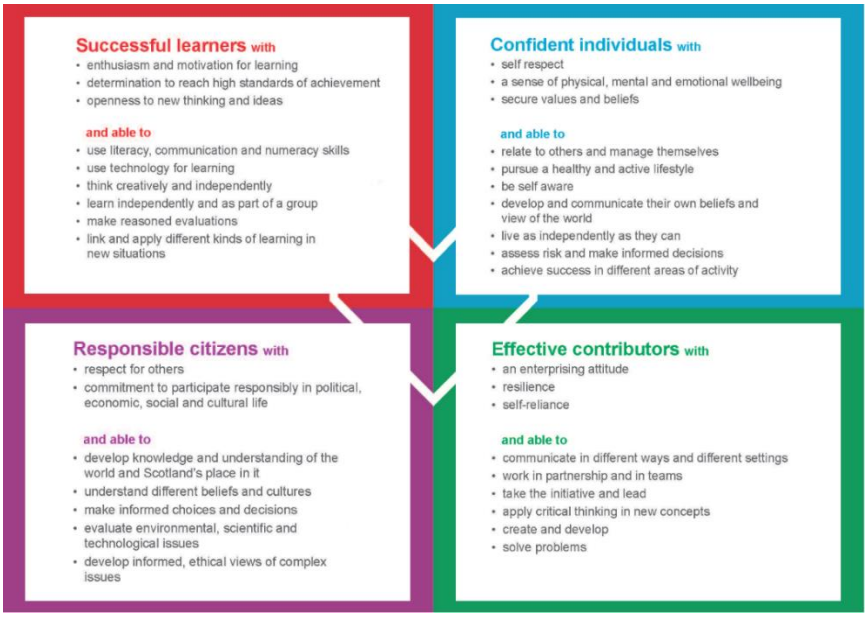
The Curriculum for Excellence vision as a driving force

The vision around the four capacities is widely appreciated, not only in Scotland but also internationally, for its bold, aspirational, value-driven and future-oriented approach, as compared to conventional curriculum thinking in policy making and school practices. As mentioned above, CfE pursues the vision of helping learners aged 3 to 18 years gain the knowledge, skills and attitudes suited to the demands of the 21st century by providing them with a broad competence-based education and helping them develop four capacities: becoming successful learners, confident individuals, responsible citizens and effective contributors.

The vision has and continues to receive broad support for its values and principles across seemingly all stakeholders, experts and practitioners. The OECD team observed this support throughout the review, during the interviews with practitioners, learners and parents of both primary and secondary education (Annex B). This support for the four capacities and the vision they draw for Scottish learners expands beyond school communities, among policy makers, education professionals and other stakeholders (OECD, 2020[11]). Also, in the political arena, there is hardly any disagreement about the overall vision. The consensual approach to educational decision making in Scotland has helped create this wide support. Although over the years, some cracks in the appreciation for CfE seem to have emerged, the wide support for the vision is still present, as evidenced in many reports and all assessment conversations.

The CfE vision is also recognised as trendsetting in international curriculum discourses. It has served as a widely cited example due to its principles and compact visualisation of the four capacities and the attributes and capabilities that specify them (Figure 2.2). Competencies such as critical thinking and problem solving, central in Scotland's Curriculum for Excellence, are two of the most targeted competencies among OECD countries and jurisdictions pursuing 21st century curricula (OECD, 2020[12]).

Figure 2.2. Attributes and capabilities of the four capacities in Scotland's Curriculum for Excellence



Source: Updated description of CfE attributes and capabilities visual, courtesy of the Scottish Government.

In the years following the development of Scotland's vision for its Curriculum for Excellence, OECD countries and jurisdictions such as Australia, Canada (Ontario and British Columbia), Estonia, Finland, Japan, New Zealand and the United Kingdom (Wales) also re-designed their curricula to align them with what students need to learn to fulfil their personal, academic and future professional lives in the 21st century. The basic ideas of CfE are still valid (after almost two decades following inception) and still adequately reflect the four broad aims that are nowadays internationally seen as relevant for learning and teaching in education.

The preliminary findings of the OECD's Future of Education and Skills 2030 project further support these future-oriented visions of aiming for the holistic development and engagement of learners. The OECD's Learning Compass 2030 also proposes a common framework to conceptualise the knowledge, skills, attitudes and values that learners need to fulfil their potential and contribute to the well-being of their communities and more globally (OECD, 2019[13]). Scotland's approach with CfE has been a continuous reference point in curriculum frameworks and visions internationally (OECD, 2020[12]). Next to more traditional (academic) knowledge aims, there is more attention placed on competencies that prepare a student for life, for personal development, and for the world of work (with appreciated options for vocational directions and apprenticeships).

CfE seems to have entered the hearts and minds of many people in many roles across the education spectrum. That is in itself an accomplishment, as beliefs are usually the most difficult to influence in curriculum change (Cuban, 1992[14]; Fullan, 2008[6]), particularly when compared with two other important dimensions of change among teachers: use of materials and instructional behaviour. However, there are still traces of some traditional beliefs (e.g. the preference for very broad programmes in terms of many separate subjects) that hinder implementation in terms of programmatic and organisational changes. Moreover, agreeing with the vision of CfE does not automatically imply that behavioural changes, notably in pedagogy, assessment and student practices, are in line with the intentions (see the next section).

Considerable efforts were made to respond to teachers' needs for clarification by developing "Experiences and Outcomes" documents that further describe the expectations for learning and progression in all areas of the curriculum. Taken as a whole, the experiences and outcomes aim to embody the attributes and capabilities of the four capacities (Education Scotland, 2018[15]). Concerns were raised, however, about the relevance, practicality and effectiveness of the tools aiming to operationalise CfE's vision, such as the attributes and capabilities, and the Experiences and Outcomes (referred to "Es and Os" by practitioners). According to practitioners interviewed by the OECD team, the Es and Os were somewhat useful in defining broad steps in learners' progression but not connected enough to learning tasks and outcomes to be useful in curriculum planning.

The OECD team also observed a degree of disconnect between the concepts of knowledge, skills and attitudes or capabilities and attributes present in the four capacities and how they are integrated into CfE learning. In particular, although knowledge elements are mentioned in the listing of curriculum areas (science; languages; mathematics; social studies; expressive arts; health and well-being; religious and moral education; and technologies), they are not explicitly referred to in the four capacities, nor in their elaboration (capabilities and attributes). CfE's vision grants all these elements a complementary role in learning, but there is no clear model of how knowledge, skills and attitudes, capabilities and attributes contribute to learning. In the absence of clarification on what is expected in terms of knowledge as part of the learning process, the role of knowledge appears somewhat fragmented and left to interpretation at the school level, although it is an essential component of learning in CfE's framework. In the overview of attributes and capabilities (Figure 2.2), knowledge is only referred to indirectly in the successful learner capacity's attributes (as literacy and numeracy skills) and in the responsible citizen capacity, but without further detail in the experiences and outcomes about what "knowledge" is referring to.

While it may be implicit in the eight curriculum areas, the current articulation of knowledge, as referred to in numeracy and literacy, seems to create ambiguity on the role of knowledge and its balance throughout

CfE from ages 3 to 18. Following discussions with stakeholders, the OECD team observed a notable pattern: the Senior Phase seems focused primarily on disciplinary knowledge, while BGE seems to have a more balanced approach in terms of weaving in the four capacities. Students interviewed spoke about the challenges they faced in making the transition from BGE into Senior Phase when they had not consolidated the basic knowledge required for the deeper learning underpinning the Senior Phase. The lack of clarity around knowledge may be understood due to an overly cautious reaction to previously overloaded, content-dominated programmes. It may be that the place given to knowledge in CfE is too implicit and that the overall representation of capacities creates the misleading impression that a strong knowledge base is no longer a priority.

The conceptualisation of knowledge is difficult, particularly for education systems attempting to move away from traditional, content-dominated curricula. Knowledge does not necessarily need to be equated with specified subject content and can be discipline-based (in smaller or broader learning areas), as well as interdisciplinary-oriented (around themes or in projects). Moreover, knowledge has multiple aspects, both conceptual and declarative, as well as procedural and epistemic. For instance, the OECD Learning Framework 2030, a product of the OECD Future of Education and Skills 2030 project, distinguishes four different types of knowledge, which can help better nuance its position in a curriculum (OECD, 2019[16]):

- **Disciplinary knowledge** includes subject-specific concepts and detailed content, such as that learnt in the study of mathematics and language, for example.
- **Interdisciplinary knowledge** involves relating the concepts and content of one discipline or subject to the concepts and content of other disciplines or subjects.
- **Epistemic knowledge** is the understanding of how expert practitioners of disciplines work and think. This knowledge helps students find the purpose of learning, understand the application of learning and extend their disciplinary knowledge.
- **Procedural knowledge** is the understanding of how something is done, the series of steps or actions taken to accomplish a goal. Some procedural knowledge is domain-specific, some is transferable across domains.

Boyd's framework of "knowledge and ways of knowing" (2019[17]) similarly highlights the importance of both disciplinary and interdisciplinary knowledge. This framework also introduces the concept of "ways of knowing", which is closely related to the development of epistemic knowledge and learner abilities, such as self-directed learning and growth mindset.

In general, the progress made in curriculum research since the formulation of CfE's vision in 2000 and broader changes in education and society since then offer opportunities to consider some of the vision's core elements, such as the role of knowledge in 21st century curricula. Other countries pursuing competency-driven curricula, close in ambition to Scotland's Curriculum for Excellence, have developed models to clarify the role and interaction of key elements of learning such as knowledge, thus supporting schools' and teachers' development of their curriculum and teaching strategies. For instance, British Columbia (Canada) re-designed its curriculum framework for school education in the 21st century and developed a curriculum model to help schools and teachers develop their curriculum and teaching practices, including a concept-based approach to learning (Box 2.1).

Box 2.1. Curriculum model in British Columbia (Canada)

British Columbia (Canada) re-designed its curriculum framework for school education in the 21st century, building on a concept-based approach to learning and driven by the development of competencies to foster deeper, more transferable learning. The curriculum approach emphasises the deeper understanding of concepts and the application of processes than on memorising isolated facts and information. The learning standards and big ideas for each area of learning identify what is essential — what students are expected to know, be able to do, and understand at each grade.

The curriculum model *Know-Do-Understand* pulls together the best from modern learning theories and British Columbia teachers' advice. The curriculum model is made up of three elements: content, curricular competencies, and big ideas. "Content (Know)" defines what students are expected to know; "Curricular Competencies (Do)" sets out what students are expected to do; and "Big Ideas (Understand)" indicates what students are expected to understand. Teachers combine the three elements in ways they see fit to personalise learning in their classrooms. The content learning standards — the "know" of the *Know-Do-Understand* model of learning — detail the essential topics and knowledge at each grade level.

Source: Government of British Columbia (Canada), (2016[18]), "Curriculum Redesign", https://curriculum.gov.bc.ca/rethinking-curriculum [accessed on 29 March 2021].

Moreover, in terms of measuring progress to accomplish the vision of CfE, the National Improvement Framework (NIF) introduced metrics to understand progress in two key areas of CfE learning: literacy and numeracy. However, the OECD team reflected on whether the focus on these areas clarified the curriculum policy intentions and successfully communicated the progress made in terms of the richness of CfE learning by students or whether it narrowed its priorities. While the NIF emphasises progress on literacy and numeracy, students learning under CfE would benefit from additional evidence on deeper knowledge, health and well-being, and other domains prioritised by CfE.

There appears to be a rich amount of quantitative data collected on Scottish education, but only limited systematic information about what occurs in classrooms implementing CfE. There is a grey area between the intended vision and the attained curriculum. There is selected evidence, and the evidence pack provided by the Scottish Government to the OECD team included a vivid set of case studies of schools that have implemented CfE (Scottish Government, 2021[19]). The OECD team also collected anecdotal evidence from parents who considered that their children had developed a range of knowledge and skills that embody CfE, such as analytical skills, international and social awareness or strong teamwork, for example. However, the team considers that there is a lack of consolidated evidence of CfE practices in schools, hampering a more precise and evidence-informed diagnosis of the curriculum in action and its outcomes.

Following the development of a range of concepts to develop CfE since its inception, there were concerns about the increasing complexity of the underpinning documentation for practitioners to realise the CfE vision. Following a recommendation made in the OECD (2015[20]) report, a group initiated by the Curriculum and Assessment Board, and composed of practitioners, researchers and system leaders collaborated to develop a "refreshed narrative" for Curriculum for Excellence, aiming to consolidate the different documents describing CfE, clarify its core elements and support the process of curriculum design at the school level. It was developed for two broad purposes: to provide a single point of entry to guide practitioners amidst a range of curriculum advice; and to facilitate engagement with the core principles and big ideas of CfE and development of practices to enact these big ideas (Scottish Government, 2019[10]).

This OECD assessment has not observed any particular impact of the refreshed narrative, perhaps due to the short amount of time between its introduction and this assessment. However, several elements suggest that the refreshed narrative may not necessarily fulfil its mission. First, practitioners and policy makers interviewed by the OECD team suggested the refreshed narrative may not have addressed ambiguities of some key concepts of CfE, such as the role of knowledge in learning within the CfE vision and how the four capacities, including their attributes and capabilities, relate to learning practices and observable outcomes. It was also suggested that practitioners might not necessarily focus on the refreshed narrative amidst the vast amount of existing CfE-related documents and their previous ten years of practice.

While there have been efforts to clarify the vision set within Curriculum for Excellence, the OECD team noted some misalignment and lack of clarity between its aims and objectives and actual provision and transitions from ages 3 to 18. Overall, in BGE, especially in primary schools and for students who study to prepare Advanced Highers, selected evidence and stakeholder interviews suggest that the learning aims and objectives align with the vision defined by CfE and the four capacities.

There is a gap, however, in terms of the overall curriculum goals and the qualifications students prepare for during the Senior Phase. Under CfE, the Senior Phase aims to provide opportunities to achieve deeper learning and study for qualifications, awards and other planned activities to develop the four capacities. In practice, the alignment between the learning aims and objectives and the four capacities in the Senior Phase is limited by the type of assessments and subsequent learning practices imposed by restrictive coursework to prepare for national qualifications. While these qualifications can be considered as statements about the specific goals of learning, their emphasis seems to deviate from CfE's broader curriculum philosophy and aims. This narrow focus also appears to have backwash effects on teaching practices and learning experiences in the last years of BGE (OECD, 2020[11]). The emphasis on preparing for exams in secondary education also seems to widen the gap between the vision set in CfE and the practice, as the exams and qualifications may show a limited representation of the broad capacities. For instance, the OECD team heard repeated calls from both learners and parents for a stronger emphasis on preparation for life and work than thus far realised in many current school practices.

On the other hand, CfE's ideals of excellence and equity are well regarded and supported in Scotland. The system's ambitions are embodied in the broad learning aims set for all students during their schooling and in the policy goal of closing the achievement gap between students from different backgrounds. Targeted policies are developed to respond to this ambition. International evidence, including from Scotland's past performance, shows that high-performing education systems can sustain both excellence in student learning and high levels of equity, meaning that excellent learning achievements are not determined by socio-economic background (OECD, 2019[21]). Some stakeholders interviewed by the OECD team expressed a continued tension between the ideals of excellence and equity in CfE, however. Overall, although they support this aspirational goal, stakeholders highlighted that the education system by itself could contribute but not fully achieve it (OECD, 2020[11]; 2015[20]).

Overall, the OECD team considers it wise to maintain the core message of the CfE vision, given its collective development and widespread support. However, while the ideas on paper and in policy are clear, the OECD team's visits, research and analysis conducted on CfE suggest a gap between the intentions set out in CfE, and stakeholders' diverse interpretations and different practices of CfE across Scotland. While this is partly the intention of CfE in terms of autonomy concerning its implementation, it might be worth taking a fresh, critical and creative look at the vision again in light of almost two decades of many societal, scientific, health, political and technological changes that have taken place at both national and global scales. Reviewing what those relatively abstract statements mean and imply for choices in the curriculum for student learning could be a valid exercise to define the next steps.

From the perspective of students, the vision seems globally integrated with Broad General Education for students up to 15 years of age, but less so in the Senior Phase. At this level of education, stakeholders and researchers highlight a gap in practice in terms of CfE aspirations and actual focus on student learning.

This may be because the implementation of that last stage of the 3 to 18 trajectory started later than for BGE, from 2014 onwards, and has had less time to integrate. However, it may also show different tensions, including mismatches between indicators to measure CfE outcomes; between external assessments and CfE expectations; and between progression across the four capacities. Clarifying the metrics of what CfE accomplishes and closing this gap between the vision and practice in the Senior Phase will be at the heart of success in the future development of CfE.

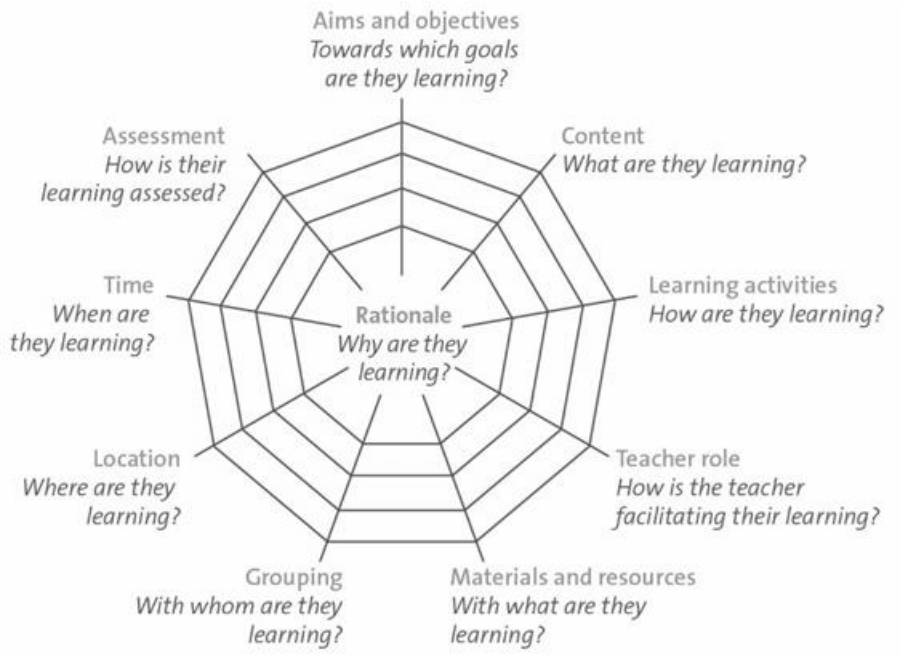
Coherence of the Curriculum for Excellence components

Curriculum for Excellence was developed following a national debate in Scotland in the early 2000s. The first statement of intent was published in 2004, followed by a *Building the Curriculum* series until 2010. These documents, developed in collaboration with national and local partners, set out the broad parameters of CfE, with schools and local authorities encouraged to innovate and find local approaches to planning and delivering the curriculum. *Building the Curriculum 3: A Framework for Learning and Teaching* (2008[22]) is a key document in the series. It sets out the curriculum levels, the eight curriculum areas and principles for curriculum design. “Experiences and Outcomes” followed, setting out concise statements about children's learning and progression in each curriculum area set across five curriculum levels. Benchmarks were developed over 2016/17, complementing the experiences and outcomes and trying to clarify what learners need to know and be able to do to progress through the levels. They also provide support for consistency in teachers’ and other practitioners’ professional judgements when it comes to assessing the achievement of a level.

Traditionally, a curriculum is primarily associated with the aims, content and organisation of learning (Walker, 1990[23]), but various authors (Klein, 1991[24]; van den Akker, 2003[4]) have expanded this list of components to present a more comprehensive image of a curriculum, including: vision or rationale, goals and objectives, contents, materials and resources, learning activities, teaching strategies, assessment, grouping, time and location. When trying to re-design a curriculum and making it work in practice, it is important to pay attention to the coherence of those components. The (normative) vision on the overarching, broader aims of learning and teaching (analysed in the previous section) serves as a central link, providing glue and connecting all other curriculum components. A metaphor to illustrate this viewpoint is a spider web (Figure 2.3), which includes guiding questions for the many curriculum components (Thijs and van den Akker, 2009[8]; van den Akker, 2003[4]). The curricular spider web points to both the flexibility and the vulnerability of a curriculum, as every chain is as strong as its weakest element, while all components are inter-related and inter-connected.

Besides a visual representation of the challenging components, the curricular spider web can serve as an analytical tool to explore and clarify the discrepancies between the existing and desired curriculum, as well as a design tool that assists developers (including teachers) in prioritising the next steps in the process of getting to a coherent curriculum. Impressions about various components of CfE, according to the spider web, are presented in the following sub-sections, with special attention drawn to perceived gaps between the implementation of the intended curriculum in school and actual classroom practices.

Figure 2.3. The curricular spider web



Source: Thijs, A. and J. van den Akker (2009[8]), *Curriculum in Development*; van den Akker, J. (2003[4]), "Curriculum perspectives: An introduction".

Contents and student learning

Learning in CfE aims to be holistic and centred on the learner, as emphasised by the four capacities. Students are expected to develop knowledge, skills and attitudes. The CfE framework encompasses four contexts for learning: curriculum areas and subjects, interdisciplinary learning, ethos and life of the school, and opportunities for personal achievements. To embed these, and as mentioned above, learning is structured around three interdisciplinary areas (literacy, numeracy and health and well-being) and eight curriculum areas: Expressive Arts; Languages; Religious and Moral Education; Social Studies; Mathematics; Sciences; Technologies; Health and Well-being. Some of these curriculum areas are priorities of the Scottish Government and receive dedicated funding.

For instance, literacy and numeracy are two priorities set out in CfE and the National Improvement Framework. The approach to support literacy is built on a Literacy Action Plan, which informs a range of government-funded programmes. To tackle the priorities for numeracy and mathematics education, Scottish authorities follow and implement recommendations from the *Making Maths Count* report (2016) (Scottish Government, 2021[19]).

The *STEM Education and Training Strategy for Scotland*, published in 2017, is a targeted five-year programme of actions that aims to encourage the development of science, technology, engineering and mathematics (STEM) capabilities and skills to improve opportunities for all, meet employer skills requirements, drive inclusive economic growth and allow Scotland to flourish and compete on a global platform. It includes actions in early years and school education, community learning, colleges, universities, apprenticeships and science centres and festivals. In schools, this includes supporting professional learning to increase teacher confidence in delivering STEM, implementation of the Young STEM Leaders programme, development of a STEM Nation Award to recognise excellence in schools delivering STEM, the collation of an online directory of inspirational resources for schools, and expansion of the Improving

Gender Balance Programme to tackle unconscious bias and gender stereotyping. Progress on this activity is reported annually, including data on key performance indicators (Scottish Government, 2021[19]).

Another priority for Scotland is the health and well-being of children, young people, and other members of educational communities. The aspiration is to help children and young people develop the knowledge, skills and capabilities to build emotional and physical well-being and resilience. CfE has a central role in promoting it, with a dedicated curriculum area and set of Experiences and Outcomes. Its approach is based on a shared responsibility across education levels to make children and young people feel nurtured, safe, respected and included in the learning environment.

The area of social studies aims to help learners understand their own country, the history and heritage of Scotland and the challenges it faces. Specific actions to support social studies involves granting funds to external "delivery partners" who work with schools to provide activities in this learning area, bring external speakers to talk to learners, and organise school trips. Support is also provided to specific themes such as Holocaust education, heritage education and social enterprise in schools.

Language education includes specific actions to preserve the Gaelic and Scots languages, support British Sign Language and develop further learning of all languages from Primary 1 onwards. The 1+2 languages policy aims to enable all learners to study three languages by their third year of education, which has required additional support and funding to guarantee a diverse offer at the school level since 2013 (Scottish Government, 2021[19]).

In general, the OECD team observed and learnt from its interviews with school-level actors that the diversity and holistic approach to learning is consistently adopted in primary schools. The approaches to student learning referenced above appear activity-based and show flexible variation (in line with CfE intentions) in primary, and to some extent, lower-secondary education. The school case studies provided in the evidence pack (Scottish Government, 2021[19]) are testament to the richness of practices for student learning aligned to CfE, in addition to some of the evidence presented by students during discussions with the OECD team and data on improvements in outcomes provided in the NIF annual reports.

The holistic approach also seems to be followed in most secondary schools in the first two years (S1 and S2), although it was often described as challenging by teachers, school leaders and learners. One of the most salient reasons highlighted was the seeming misalignment between the content and learning framework of CfE and the requirements prescribed in national courses for qualifications taken in secondary education. Learning in the Senior Phase was described as being aligned to National Course prescriptions, to best prepare students for important exams required to complete education and move onto the next stages. Such learning does not follow the same structure and principles as CfE (see Chapter 4). As a result, the learning approaches designed in CfE are not fully realised in secondary schools.

Student learning patterns show more traditional learning activities at the upper-secondary level (Senior Phase), with its strong focus on exam accreditation. Senior Phase students reported an emphasis on rote learning and memorisation, which they described as "boring", and on preparing to succeed in the tasks required for qualifications (OECD, 2020[11]). They have fewer opportunities to experience more engaging, intrinsically motivating activities related to problem solving, creativity, co-operation or communication. Interestingly, students reported that they experienced more meaningful approaches to learning in the Advanced Higher courses, which seem to better reflect the CfE vision. Although less explicit, teachers and school leaders also expressed their concerns about the limited instructional patterns in the Senior Phase in relation to CfE. They referred to the need for traditional practices to remain in place as the most efficient way to help students obtain their qualifications.

In some instances, CfE's aspiration to place the student at the centre of learning appears at odds with competing agendas of standardisation (also induced by policy messages and measures) and preparing students for the workforce (Britton, Schweisfurth and Slade, 2018[25]), especially in the later years. Existing accountability mechanisms focus on narrower outcomes than suggested in CfE's vision, which creates

incentives for Senior Phase students and secondary schools to hold on to traditional learning, teaching and assessment practices that do not align with the practices and pedagogy relevant to CfE (Hayward, 2018[26]).

All stakeholders interviewed by the OECD team concurred with the observation that the first three years of secondary education (S1-S3) are increasingly influenced by the need to prepare students for the Senior Phase and its national course exams, with less emphasis placed on designing a curriculum to meet their needs as envisaged by CfE. This appears to be a consequence of both unresolved design issues within CfE and student assessment policies, among other factors. School practitioners observed that the purpose and focus of S2 in particular – a legacy of the 5 to 14 structure that predated CfE – continues to shape its delivery and learners' experience. Preliminary findings from research conducted with school leaders in Scotland found that a considerable proportion of schools asked students to start choosing subjects in S2 (51% of schools, as reported by the school leaders surveyed) and sometimes as early as S1 (14%) (Shapira et al., 2021[27]). Research conducted in Ireland found that the second year of the secondary phase has particular importance for the future engagement and retention of students in the school system; students in the longitudinal study who were not engaged by their second year experience did not re-engage in later years (Smyth et al., 2006[28]).

The lack of alignment of these secondary education years to the CfE vision has historical and structural roots. The structure of the later years of secondary education did not evolve alongside CfE. Given the historically valued preference for a broad curriculum offering in Scottish education and its objective as part of CfE, there are debates around the number of curriculum areas to be chosen by students. As CfE aims to provide both breadth and depth of learning, without agreement on what constitutes an education that is both broad and deep, schools lack clarity on the number of subjects their students should study and the appropriate structure to support their progression. The high number of classes taken in BGE – up to 15 and 17 according to school testimonies (OECD, 2020[11]) – might result in fragmentation and superficiality (with few hours available for each subject per week). Among official submissions echoing stakeholders' concerns to the Scottish Parliament, Universities Scotland specified that learners usually choose around seven or eight subjects for National 4 and five in S2, then a narrower set of subjects for S5/S6, and warned against the risk of further narrowing and "pigeon-holing" students at too early an age (Scottish Parliament - Education and Skills Committee, 2019[9]). The number of subjects in the Senior Phase is seen by some as too low, as they are narrowing a broad education, limiting choice to students and offering insufficient preparation and depth into disciplinary knowledge due to the focus on qualification preparation (OECD, 2020[11]). Others believe that the importance of broad choice is perhaps over-emphasised, as it may create tensions with the desired deeper understanding of knowledge.

The OECD team noted schools' commitment to conceive curriculum models that offer a wide variety of learning experiences, subjects and qualifications (see Box 2.2 for an example). The issue of subject choice was initially considered as an example of local curriculum flexibility. Different pathways have developed, especially with a wide array of vocational choices also delivered by colleges. The variation of subject choice between schools may have unforeseen consequences for learner progression, however, given the historical importance of subject choice in Scotland. There seems to be an issue about the real choice options students have, given the variation between schools, depending on the context, capacity and resources (Shapira and Priestley, 2018[29]), which touches on equity concerns. Of note in discussions between the OECD team and stakeholders were some observations about the constraints placed on schools by some local authorities in curriculum organisation.

Box 2.2. Curriculum for Excellence, as applied at the Portlethen Academy (secondary school, Aberdeenshire)

Vision: To be the very best we can be.

Values: Learn and improve. Get involved. Think of the consequences. Respect all.

Rationale: Attainment for all and Developing the Young Workforce (DYW) have been central planks of our thinking and we have worked to establish a flexible and broad curriculum that is responsive to pupils' needs, interests and aspirations. The offer aims to provide pathways that have strong links to the workplace and to Skills for Life, Learning and Work for all young people. We aim to be flexible and provide experiences that allow young people to focus on interests but are not so narrow as to be limiting. The offer also provides experiences and certification for young people who do not fit the "traditional" profile of the N5s and Highers offer.

Design traits: The curriculum is based on the four capacities of Curriculum for Excellence. A skills framework is built into curricular content. A personalisation process is offered to pupils as they move from S2 into S3. All of the Senior Phase years (S4-S6) are timetabled together. The Senior Phase has a wide curricular offer: young people can choose and achieve qualifications in subjects that allow for progression into employment, further education and higher education. There is a strong focus on Developing the Young Workforce throughout all stages of the curricular offer, including numerous qualifications and courses (Foundation Apprenticeships, National Progression Award [NPA] Enterprise and Employability). Links with North East Scotland College (NESCol) widen the Senior Phase curricular offer. The school is involved in the Excelerate programme in conjunction with the Wood Foundation with a developing focus on project-based learning. Key partnerships are developed to enhance learning, e.g. with community learning and development (CLD) (Gear Up To Go), the Mackie Academy and Mearns Academy (Moving Forward), and the Aberdeen Football Club Community Trust.

Concretely, the curriculum for the last three years of Broad General Education (lower-secondary) implies:

- Pupils follow a curriculum in S1 and S2 designed to give experiences in all subjects they can select from in S3/Senior Phase.
- A personalisation process as pupils progress from S2 into S3.
- A high level of support offered when personalising the curriculum at the end of S2.
- Moving Forward curricular input is offered in conjunction with two neighbouring schools for targeted pupils in S3.
- The curricular offer is developed with the Aberdeen Football Club Community Trust to offer a tailored pathway linked to health and well-being and sport, which leads into an offer in the Senior Phase.
- S3 pupils complete awards during core subjects (e.g. the Religious Beliefs and Values Award in Religious, Moral and Philosophical Studies [RMPS], the Employability Award in Personal Social Education [PSE]).

In the same school, the Senior Phase curriculum implies:

- S4: Six subjects, including English and Mathematics. Maths and Applications of Mathematics are both offered and completed by pupils in S4 to enhance attainment. S4 students complete awards during core subjects.
- S5: Five subjects plus an enrichment option (allows for additional subjects/qualifications).
- S6: Four or five subjects, plus an enrichment option.

- Pupils choosing a National 4 or National 5 course also complete a Personal Finance qualification.
- S5 pupils complete a Personal Development award at Scottish Credit and Qualifications Framework (SCQF) Level 6 from session 2020/21.
- S6 pupils complete a Leadership Award at SCQF Level 6 from session 2020/21.
- A wide offer of qualifications (National Qualification [NQ], NPA, SQA Awards, Foundation Apprenticeships).
- Foundation Apprenticeships are offered in Accountancy, Children and Young People and Health and Social Care and a pilot Foundation Apprenticeship in Creative and Digital Media (2019/20), and in four additional frameworks (Business Skills, Engineering, Information Technology [IT] Software, Scientific Technologies) in 2020/21.
- Additional pilots explored (SCQF Levels 4 and 5) with the support of the local authority and the Aberdeen Football Club Community Trust.

Source: Scottish Government (2021[19]), *Curriculum for Excellence 2020-2021 - OECD review: initial evidence pack*, https://www.gov.scot/publications/oecd-independent-review-curriculum-excellence-2020-2021-initial-evidence-pack/ [accessed on 24 March 2021].

More reflection seems advisable on the actual degree and nature of student choice. In discussions with education stakeholders, the focus on academic preparation in traditional subjects was predominant. The strong focus on the number of subjects in comparison to the modest attention to the actual quality (relevance, consistency, practicality, effectiveness) of teaching and learning fit for the 21st century at this level appears to be an issue. This is also illustrated in parliamentary debates on Curriculum for Excellence, where stakeholders expressed the view that learners in all schools should follow a similar number of courses each year; and that greater prescription should be provided on a core set of subjects in the curriculum (Scottish Parliament - Education and Skills Committee, 2019[9]).

Prescribing the same number of courses for all students, regardless of their preferences for post-secondary routes and destinations, may not be optimal, however. Doing so does not seem aligned with some of the policy intentions mentioned above or with quality. In the Education Scotland (2020[30]) report about curriculum in secondary education, Her Majesty's (HM) Inspectors of Education noted that the focus of professional debate needs to be less about the number of subjects or courses and more about how to deliver the Senior Phase entitlement in creative ways. Teachers and school leaders also noted that Senior Phase curricula need to meet the range of young people's needs and develop their skills, attributes and capabilities as well as opportunities to attain qualifications that support positive destinations, taking into account the school's unique context. Inspectors also noted that the extent to which the curriculum offered leads to positive outcomes for young people depends on several factors; it is not just about the number of subjects offered in any one year in the Senior Phase. Some of these factors include the quality of change leadership; students' own perception and day-to-day experience of the curriculum; the curriculum enacted in the quality of learning and teaching; the effectiveness of BGE in supporting progression to the Senior Phase; and the range and quality of learning pathways provided that best meets the needs of learners within the school (Education Scotland, 2020[30]).

This focus on subject choice, however, and the failure to address the problems associated with it has also had implications for how the CfE commitment to a broad curriculum translates at the school level. Breadth is one of the design principles of CfE and was defined in guidance for practitioners on assessing student achievement as "the number and range of experiences and outcomes encountered by learners" (Education Scotland, 2012[31]). In a discussion of interdisciplinary learning in *Building the Curriculum 3* (Scottish Government, 2008[22]), this was defined as "space for learning beyond subject boundaries", where learning

can be organised based on groupings of experiences and outcomes from within and across curriculum areas.

Interviewing system leaders, teachers, students and their parents, the OECD team was struck by how differently they understood breadth in CfE. For most stakeholders, breadth was defined by offering as many subjects as can practically be made available in secondary schools to give students as much choice as possible in moving to the Senior Phase. This is not an unreasonable position of schools given the backwash of qualifications and the professional profile of teachers as subject specialists. An enquiry by the Scottish Parliament in 2019 into subject choices noted the tensions between the aspiration for a wide choice and what was termed by one witness as "the six-column environment" (where students choose their options from across six columns) (Scottish Parliament - Education and Skills Committee, 2019[9]). There was no discussion of the meaning of breadth beyond access to subjects. Yet, originally, breadth was envisaged as providing students with opportunities to connect within and across disciplines and with real-life contexts and problems. What CfE proposed was not the end of subjects but a curriculum that made explicit efforts to afford students with those opportunities. In discussions with stakeholders from primary schools, interdisciplinary studies were mentioned but as a marginal activity in curriculum making and student learning. Discussions with those in secondary schools did not raise the issue of interdisciplinary studies.

Another important issue related to the content in the Senior Phase is the balance between knowledge and skills. This issue links back to the analysis of CfE's vision and its lack of clarity on the role of knowledge in learning and the CfE framework. Some suggest that the disciplinary knowledge offered is too limited to adequately prepare students for academic studies. In contrast, others found this less problematic and argue that depth of acquisition and broader competencies are more important for future learning and studies.

The OECD team suggests developing a more nuanced view of the role of knowledge in relation to aspired skills or competencies (defined as the interaction between knowledge, skills and attitudes). It is internationally common to gradually move from many subjects (partly grouped into broad learning areas) to a smaller amount of more discipline-based subjects in the academically oriented streams in upper-secondary education (O'Donnell, 2018[32]). Such subject-oriented courses offer more chances to acquire deeper learning and understanding, which is also beneficial for generic learning ability. However, one would hope that within those subjects, deliberate attempts are made to clarify and demonstrate how such subject-focused learning can contribute to broader aims and themes, including attention to the four capacities.

Overall, the OECD team found that, in contrast to how BGE has adopted CfE across the board, the substantive design of the qualification-based courses in the Senior Phase is not consistently in line with the CfE philosophy and does not offer a clear transition for students from BGE into the Senior Phase. Various comments and observations suggest that the previous curriculum emphasis on subjects (including standards) and its organisation in previous structures still dominate and have not adequately been revised and adapted. Policies about subjects and breadth in the secondary phase did not develop as needed to support the original vision of CfE during the implementation period. These legacy gaps give rise to the risk of the "mile-wide-inch-deep" curriculum happening in S1-S3, as identified by the OECD in several education systems in a study on curriculum overload (OECD, 2020[11]). They are now impeding the further development of CfE and curtailing its aspirations for learners in secondary schools.

The role of teachers

Teachers in Scotland are regarded as well educated and respected professionals. The many teachers the OECD team had conversations with confirmed this reputation. Overall, the team recognises a strong commitment to varied teaching approaches for student learning and curriculum design. During general education, teachers appear to be quite successful in that respect. Many testimonies were heard of their

efforts to develop CfE for their students, of their engagement in learning and in moderation to ensure they were assessing their students well, particularly in primary and lower-secondary education. The case studies in the evidence pack also present concrete teaching practices and approaches (Scottish Government, 2021[19]).

Less clarity seems to exist about pedagogical approaches that are well aligned to CfE in (particularly senior) secondary education. Both teachers and school leaders reported ambiguities and difficulties in realising CfE principles and instructional ideals at this level. The move from general teachers to specialised subject teachers in secondary education may imply more specialisation and less integration of learning to meet the principles of CfE. As mentioned in the previous section, such varied and challenging approaches are hard to enact in a context where passing externally set assessments, including national exams (that reflect quite different emphases) is an obvious priority in the immediate interest of students (and their parents).

In terms of commitment to curriculum renewal, the complex context for educational reform - with many competing priorities and tasks and with tensions between autonomy and regulation - seems to diminish the focus on "quality teaching for quality learning" (Chapman, 2019[33]). This policy context also reduces opportunities for "teacher agency", according to selected academics (Priestley, Biesta and Robinson, 2015[34]), where teachers (not only individually but also in teams) have more substantial influence in shaping their day-to-day curriculum work. Obviously, translating curriculum policy documents into classroom realities is a complex and demanding task; it needs space, time and support for teacher professional development (Wallace and Priestley, 2016[35]). While many efforts for this professional development have been initiated, and many teachers have been developing curricula and sharing practices across schools and networks, it is clear that sustained investments are needed.

Materials and resources

CfE has produced large amounts of guidance materials for teachers to support them in developing their own curricula in schools and classrooms. Given the allocated curriculum autonomy and demands by teachers for guidance, these are important efforts by the Scottish government to support the development of CfE in schools. As the curriculum was being implemented, a range of guidance and support materials was generated at both the national and local level. This led, over time, to a perception of overload by practitioners, as reported to the OECD team.

Action was taken at the national level to significantly streamline all support and guidance materials for the curriculum. In 2016, a definitive "Statement for Practitioners" from HM Chief Inspector of Education was published (Education Scotland, 2016[36]). The statement acknowledged that there was too much support material and guidance for practitioners at both the national and local levels, which was contributing to the growth of over-bureaucratic approaches to planning and assessment in many schools and classrooms across the country. The statement was intended to provide clear, practical advice for teachers and practitioners on the planning of learning, teaching and assessment across the curriculum. It summarised the key components of the curriculum framework within which teachers and practitioners were expected to teach.

The OECD team recognises that important efforts, resources and engagement have been invested to develop CfE after its initial design. This continued policy attention is impressive. However, an unintended consequence is that the many curriculum-related documents, tools and instruments have become rather complex. The evolving CfE seems overloaded with numerous elements: the vision around its four capacities (with attributes and capabilities); seven principles; eight curriculum areas; curriculum entitlements; qualifications; expectations and outcomes; benchmarks; moderations; progression levels; and more. Although the efforts aimed to bring more clarity, often in response to practitioners' concerns and questions, taken together, this somewhat overwhelming image has elicited some criticism, e.g. a "cluttered", "over-accessorised" curriculum, which includes specific, somewhat unnecessary, jargon.

The complexity inherent to CfE makes it not only challenging for foreign outsiders (such as the OECD team) to grasp in its totality, but it also reduces the clarity and consistency for practitioners, hampering actionable curriculum design on the ground. Moreover, while CfE policy intends to stimulate flexibility for local curriculum design, it can place this flexibility at risk, as the multitude of measures and documents suggests an output regulation with high prescription. The amount of ongoing policy and support documents seems somewhat in contrast with the espoused autonomy and flexibility for school leaders and teachers to be the major agents for change themselves. This contrast is reflected in the frequent policy vocabulary about "delivery", which might suggest that practitioners have an obligation to hand over the curriculum (as a package from above) to their learners. In the literature about education policy implementation, the term and process of "policy delivery" refer to top-down approaches to implementation which leave little agency to school leaders, teachers, learners and other stakeholders (Viennet and Pont, 2017[2]).

The OECD team also heard concerns about the clarity and practicality of the documentation produced around CfE. According to the stakeholders interviewed, teachers need other kinds of materials, or additional support and coaching, to feel comfortable enacting the curriculum. Based on what the OECD team could observe during school visits and analysis of school case studies, most instructional materials seem to be site-specific, developed by teachers themselves, within their own school or in networks with colleagues of schools in their region.

Compared to many other countries, Scottish teachers seem to rely much less on textbooks produced by educational publishers. This may be seen as a sign of strong professional capacity among teachers. However, it also raises some questions about efficiency, as developing high-quality instructional materials requires a lot of expertise, time and energy, while teachers often lack time for this type of work.

Schools and teachers internationally are increasingly given responsibility in curriculum management in countries and jurisdictions where curriculum adaptations or autonomy are granted at the local or school level to ensure that the curriculum meets the needs of students and local communities. However, some education systems report that curriculum overload tends to be heavier at the local level, with teachers and schools overburdened by the responsibilities such autonomy entails. This is often due to one of two extremes: either a lack of guidance on what to remove and what to prioritise in curriculum content or guidelines that are too prescriptive. In some instances, teachers may also have difficulty combining new competencies and subjects with traditional disciplines, contributing to greater overload (OECD, 2020[37]).

The use of (non-prescriptive and adaptable) exemplary or "educative" materials (Ball and Cohen, 1996[38]; Davis and Krajcik, 2005[39]) has been shown to free up time and energy for teachers for (preferably joint) professional capacity building during adaptation of such materials to their specific contexts. It may be an option to make the multitude of many separate curriculum policy tools less overwhelming and more actionable for teachers by translating and integrating them into materials that exemplify those essential parts of the curriculum that are experienced as particularly challenging by teachers. Systematic evaluation and subsequent sharing of high-quality materials (such as exemplars) in networks and digital platforms (for instance, through Glow) may offer welcome opportunities to support efficient (re)design of practices and professional learning in Scotland.

Grouping, location and time

The grouping component was less prominent in conversations between the OECD team and practitioners. Few specific comments or problems about grouping of learners were made, with one exception seldom raised during the interviews: organisational and pedagogical challenges about differentiation within multi-level classes. "Multi-course" teaching in Scotland relates to a situation in which a teacher must attempt to teach coursework for different levels of qualifications in the same class. The OECD team understood that this issue had taken prominence in discussions around teaching and learning in secondary schools. Analysis by the Scottish Secondary Teachers' Association (SSTA) and the Royal Society of Edinburgh was brought to the attention of the OECD team. However, given the limited expression of

concerns among stakeholders and teachers relative to other issues, the OECD team was not in a position to add further evidence-based analysis of this issue. The Scottish Parliament's Education and Skills Committee already recommended that Education Scotland and the SQA undertake work to identify which subjects might be compatible with multi-level teaching (as reported by the Committee Convener to the OECD team).

Similarly, a few specific remarks were made on curriculum location as defined in the spider web. In recent years, investments in school buildings and facilities have been made. Unsurprisingly, the recent COVID-19 crisis has kickstarted improving the IT infrastructure.

The team also noticed some ambiguity around the scheduling of courses in S3 and above. Concerns were reported about the limited time to go into depth for the various subjects, which is reviewed in the depth versus breath section. In addition, the recent COVID-19 circumstances have led to class periods longer than the usual 45 minutes. Learners in particular (as well as teachers) appreciated this change as the longer class periods offer more opportunities for varied and deep learning.

Assessment

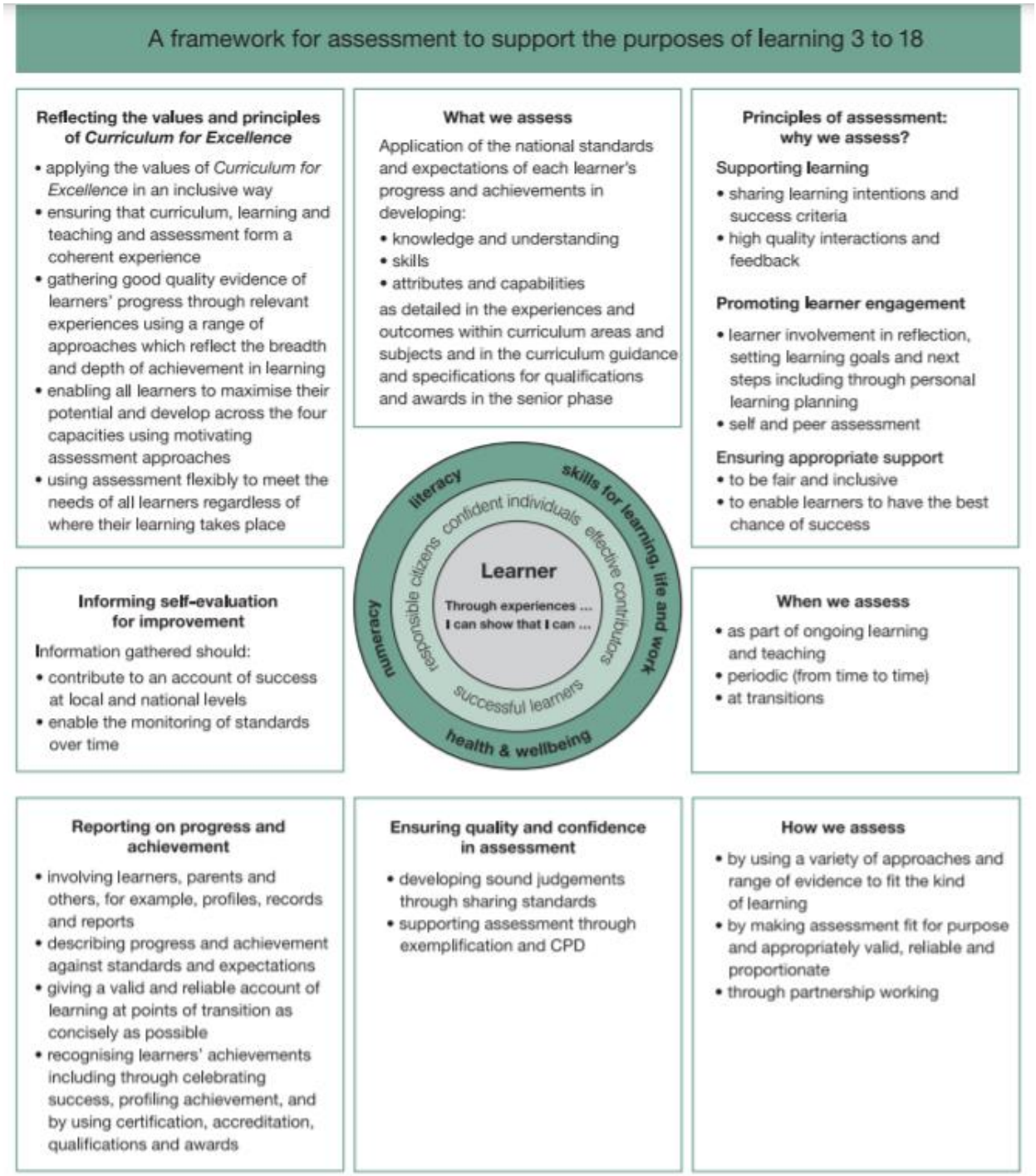
As part of the CfE policy, a comprehensive assessment framework was proposed in *Building the Curriculum 5: A Framework for Assessment*, a key piece of the CfE framework published in 2011 (Figure 2.4). *Building the Curriculum 5* was intended to be the main piece of guidance in relation to assessment advice, both in the BGE and across the entire learner journey from ages 3 to 18 years (Scottish Government, 2011[40]). It was supported by supplementary guidance, covering the following aspects: reporting; understanding and applying shared standards; recognising achievement, profiling and reporting; and quality assurance and moderation.

In 2017, guidance on benchmarks was published to complement CfE, which set out what learners needed to know and be able to do upon achievement of a curriculum level. A wide range of programmes of support for assessment and moderation were developed through collaboration between Education Scotland, local authorities and practitioners. They provided practitioners with opportunities to share, engage and reflect on the assessment and moderation of CfE levels across the BGE (Scottish Government, 2021[19]).

Following the proposed framework, student assessment is promoted as an integral part of learning and teaching and considered an ongoing process used for formative as well as summative purposes. Up to S3, assessment by teachers is supposed to be the main mode of assessing students' achievements. Experiences and Outcomes are a set of statements about students' learning and progression in each curriculum area in BGE, intended to help teachers and learners plan to learn and assess progress. Experiences and Outcomes are designed to provide for progression in learners' knowledge, skills and deep understanding and determine the framework for teaching and learning in CfE. At Senior Phase, students' choices of national qualification courses, work-based learning and other qualifications and awards define different progression frameworks. Learners may choose a blend of national courses and other types of coursework depending on their interests, learning projects and intentions for post-school destinations.

Benchmarks have been developed to clarify the national standards expected within each curriculum area and each interdisciplinary area at each level. Using the Experiences and Outcomes statements, benchmarks set out lines of progression from Early to Fourth Levels to clarify what learners need to know and be able to do to progress through the levels. They help support consistency in practitioners' professional judgements. Schools are expected to report on curriculum-level achievement for literacy and numeracy, and data are collected and collated at the national level for reporting purposes.

Figure 2.4. Proposed Framework for Assessment within Curriculum for Excellence, 2011



Source: Scottish Government (2011[40]), *Building the Curriculum 5: A Framework for Assessment*, https://www.education.gov.scot/Documents/btc5-framework.pdf [accessed on 22 March 2021].

BGE has five levels of progression (early, first, second, third and fourth) that approximately correspond to system levels of pre-school to lower-secondary education. However, CfE's approach to progression allows, in theory, for students to attain levels at their own pace. Achievement of a level is based on teachers' overall professional judgement and informed by a range of evidence against the benchmarks defined for

each curriculum level. The Senior Phase represents the sixth level of progression in CfE (Scottish Government, 2021[19]). As part of the assessment framework, practitioners are expected to engage in moderation, a collaborative mechanism through which teachers develop a shared understanding of standards and expectations. Moderation involves practitioner meetings throughout the year to discuss a range of assessment evidence that demonstrate learners' progress and achievement. It takes place at the school, local, regional and national levels.

Efforts to structure an approach to student assessment aligned with CfE's philosophy seem to have been carried out in primary schools. The OECD team finds causes for concern, however, in secondary schools and especially in the Senior Phase. At that stage, assessment practices appear to create considerable tensions and obstacles for realising the intentions of CfE. Findings from research also present a complex picture, concluding that the large number of assessment benchmarks to specify the Experiences and Outcomes has resulted in over-specified programmes, fragmented instructional tick-box approaches and more bureaucratic than coherent, curriculum planning (Hayward, 2018[26]; Priestley and Minty, 2013[41]).

Assessment is an issue of major concern and stress at the secondary level, for almost everybody, from students and their parents, to teachers, administrators, media, and politicians (both in Parliament and Government). Overall, the OECD team perceived a focus on achievement labels, levels and scores in Scotland, which is common in secondary education in many countries. There does not appear to yet be successful alignment of qualifications and exams in the Senior Phase with the CfE vision, which is not only challenging for the Senior Phase itself but is causing a backwash into the later stages of BGE (Scottish Parliament - Education and Skills Committee, 2019[9]). It is also hampering the full enactment of the CfE ideals in those stages and creating a gap in student learning and progression as students move through the curriculum. From the issues raised throughout the OECD visit and the literature, it seems that the education system spends a disproportionate amount of time and energy on technical issues around student assessments and (high stakes) examinations, while there are doubts about the relevance and validity of their goals and content.

The COVID-19 pandemic has provided a unique opportunity to explore different alternatives to student assessments, which can be considered in the future in relation to this gap. This is not a unique feature of Scottish education but a persistent problem in many OECD countries that many are aiming to tackle. Portugal, for example, passed a law delegating curriculum autonomy and flexibility to schools, intentionally promoting formative assessment, so as to avoid curriculum narrowing and to encourage teachers to explore new types of assessments (OECD, 2018[42]).

Overall implementation of Curriculum for Excellence

Scottish schools at both primary and secondary levels have developed and implemented their curriculum using the CfE framework. The OECD team emphasises that not each of the curriculum components reviewed have to be specified at all levels (nation, school, classroom), on the contrary. In principle, it is advisable that at the system level, the emphasis is on formulating general directions for why and what matters in order to inspire and guide further decision making. Vision formulation, common goal statements and joint assessment approaches can outline the general course of action since it is often difficult enough to arrive at a reasonable and workable consensus in those areas. Further interpretation and elaboration for all components are better left to local and school levels, where specific choices can be made that fit the local characteristics and preferences.

BGE is envisaged to cover the period from S1 to S3 to ensure that young people acquire a breadth of experience across eight curricular areas. The Senior Phase is envisaged as a three-year experience in which young people are encouraged to remain at school for longer and engage in deeper learning with a broader range of opportunities to develop skills that are relevant to the wider world. Several inquiries about the implementation of CfE in secondary schools observed that many schools attempted to implement the

new curriculum model of three years of BGE followed by three years of Senior Phase (referred to as the "3+3" model in Scotland) within the unchanged structure of the previous curriculum model divided into two-year periods ("2+2+2"). This resulted in unintended consequences, including the blurring of S3's purpose. S3 is at times used to start preparing students for the qualifications courses expected of them in the Senior Phase, effectively shortening the time allocated to their broad general education due to the narrowing effect of National Courses on learning in the Senior Phase. Some stakeholders viewed S3 as a "waste of time" and considered it better for this level to start preparing for Senior Phase qualifications (Scottish Parliament - Education and Skills Committee, 2019[9]).

This lack of alignment contrasts with earlier policy rhetoric about the Senior Phase, which expected the CfE values, purposes and principles to underpin all National Courses. Schools are expected to provide learners with opportunities to acquire and develop the four capacities, as well as skills for learning, skills for life and skills for work. CfE is meant to be a pedagogical approach to provide learners with a rich education, to develop the knowledge, values and skills that make them resilient in a fast-paced, global society and economy.

National Courses aim to qualify a learner's achievement against a defined standard, providing learners with the opportunity to demonstrate their acquisition of skills, knowledge and understanding in a formal way. The broad objectives of National Courses are to provide high standards, and breadth and depth of learning that will help learners progress to further study, training and employment. The reality of the Senior Phase seems, however, to deviate from the espoused policy intentions of the new National Courses.

The new National Courses were designed to form a qualifications system that:

- supports the values, purposes and principles of Curriculum for Excellence, and supports the learning of the new curriculum, including its breadth
- provides a seamless transition from Outcomes and Experiences, with increased emphasis on skills
- is inclusive, coherent and easy to understand for pupils, parents, staff, employers and other users
- meets the needs of all learners in progressing from prior levels of achievement and provides opportunities for learners to develop at different rates, at different times, in different areas across the curriculum
- provides clear and smooth progression and articulation between different levels of qualifications, to Higher and Advanced Higher, and onto post-school learning and employment
- involves an overall approach to assessment that reduces the time learners spend on assessment for certification and allows more time for learning, and more focus on skills and integration with other aspects of learning
- results in an assessment that supports, motivates and challenges learners, with more scope for personalisation and choice
- maintains high standards, credibility and relevance.

Practice in the Senior Phase seems to be different than expected. A gap between the intended curriculum (in formal policy) and the implemented curriculum in (school and classroom) practices seems to have its roots in the stage of initial curriculum design, where efforts to translate the visionary ideals into qualifications (and related course documents and assessment tools) have not fully succeeded, compromising many initial ideals. Many policy intentions at the introduction of the new qualifications (McAra, Broadley and McLauchlan, 2013[43]) do not seem to have been fulfilled yet. It was one of the major concerns raised during the national debate on education in 2002 (which led to the CfE initiative) that the secondary curriculum focused too strongly on exams.

The OECD team's general conclusion is that the coherence between the various curriculum components as well as the consistency between the policy intentions at large and the implemented curriculum in local contexts is better for learners aged 3 to 15 years, especially in primary schools, than for learners aged

15 to 18, except for students who are preparing for Advanced Higher qualifications, which seem to continue teaching and learning practices in line with the CfE vision.

BGE curricula in both primary and secondary schools could still benefit from a clearer definition of the role of knowledge in learning and competency development, as it would enhance the transition into the Senior Phase. The Senior Phase, and especially the Higher courses, do not appear to be fully aligned with CfE intentions in aims, content, pedagogy and assessment. Choices should be made in relation to what is best for students to be prepared for their future. At present, as the current student assessments in the Senior Phase are the only way to externally assess what students are learning, these are the incentives that lead the focus of the Senior Phase.

The following questions come to mind:

- How could the structure of the Senior Phase be aligned with CfE?
- How should learning and teaching be organised?
- What does breadth of learning really involve?
  - The number of subjects only?
  - Interdisciplinary learning?
  - Something else?
  - Or something more?
- And how can breadth be articulated with depth of learning?
- How much should be obligatory and how much room is available for personal choice?

The OECD team feels a balanced discussion with active input from stakeholders with different perspectives and interests would be highly useful. It is necessary, first, for the productivity of such a debate to reach more clarity on what the Scottish system means by the key terminology of “knowledge”, “skills”, “attitudes”, “attributes”, “capacities”, “capabilities”, “competences”, “dispositions” and the like. Although it is a matter of deliberations within the Scottish context, support from curriculum design scholars would help align those definitions with the concepts from the literature. Some inspiration about options could be offered by international trends and promising examples [see, for example, O’Donnell (2018[32]), for a comparative study]. The current COVID-19 situation can be a good opportunity to engage in this discussion.

When one compares the intended, implemented and attained curriculum, many good practices emerge. The original policy intention of CfE was to provide a future-oriented curriculum with a clear vision that gives more autonomy, space and flexibility for schools to adapt and enact it. The OECD team has heard testimony of this approach, building on a high-quality teaching workforce, pedagogical leadership and availability of support approaches and materials for schools and their professionals. Although the actual task of curriculum design still appears to be challenging for all schools across Scotland, a variable but gradually growing capacity is observed. It is important to realise that it takes long-term investments and time for such processes to become successful and institutionalised. That lesson can be learnt from, for example, the four decades that it took education in Finland to build up such bottom-up curricular capacity in communities and schools, with lots of patience, stamina and ongoing support (Halinen and Holappa, 2013[44]; Halinen, 2018[45]). However, it is encouraging to see that there appear to be many strong school leaders able to lead their schools to develop and build on the strengths of CfE for their students. The new initiative to lead more “from the middle” (OECD, 2015[20]), resulting in the establishment of six Regional Improvement Collaboratives (RICs), might support such curricular capacity building. Thus far, the experienced support by these RICs seems more limited than hoped for.

While there are good intentions and practices across the system, the implementation of CfE shows a large variety of practices between schools and classrooms. This leads to questions about whether the intended autonomy and flexible practices of schools are threatening the aspirations for equity in students’ experiences and outcomes. Thus far, the attainment gap appears to have decreased somewhat over the

last decade (Scottish Government, 2019[46]). However, there are tensions between the variety of learner experiences made possible by schools' curricular freedom and a wider range of qualifications by the SQA and other actors, on the one hand, and the perceptions of stakeholders and the wider public of what "success" and "excellence" mean, beyond obtaining a set of national qualifications, on the other. Further efforts are needed to ensure that the variety of instructional practices, assessment and qualifications offered are of high quality so that CfE contributes to closing the gap. However, this is not up to schools alone. Wider public, socio-economic investments and support seem indispensable in domains such as housing, health, and jobs.

Beyond CfE implementation, looking at impact, the OECD team noted positive impressions of the attained curriculum (in terms of learner experiences and results), as mentioned by many who were interviewed and confirmed by the team's observations during conversations with students. Learners seem confident, communicative, engaged, analytical, and they are quite keen to make (more) choices themselves. Many interviewees expressed that Scottish students today are much more well rounded in their development and that they exhibit more curious behaviour and a stronger entrepreneurial attitude than in previous decades. These are positive outcomes.

However, there is a shortage of valid and reliable evaluation data on such student outcomes at the system level. Using data from the Programme for International Student Assessment (PISA) on the achievements of 15-year-old students in a few subjects as indicators of CfE impact on learners provides a limited reflection of the CfE intentions. Moreover, superficial interpretation of (limited) data on student achievement (as is often done in media) usually results in more confusion and frustration than clarity. As one of the interviewed researchers expressed, "Scotland collects large amounts of data, but they are often not exactly adapted to their subsequent use, or they lack rigorous definition and evaluation" (OECD, 2020[11]). Collecting data is not the same as conducting high-quality research, which contributes to understanding and to offering meaningful feedback and feedforward to the system.

Referring to the potential added value of educational research to curriculum development, there appears to be a relative shortage of design-based curriculum research in Scotland. Most published research is of a descriptive, analytical, conceptual or critical nature. That may be relevant in various ways, but there are a few examples, with the exception of Drew, Priestley and Michael (2016[47]), of collaborative efforts of researchers and teachers to systematically address practical curricular problems in such a way that it contributes to improving curriculum design and implementation, to the professional development of the participants involved and of knowledge growth about those challenges (Mintrop, 2016[48]; Pieters, Voogt and Pareja Roblin, 2019[49]; van den Akker and Nieveen, forthcoming[50]). Thus, the OECD team endorses the International Council of Education Advisers' recent call for more and stronger research-practice partnerships and design-based research, which can occur through various modalities, such as Lesson Study, Teacher Design Teams and Professional Learning Communities. Commonalities among these modalities include starting with analysing practitioners' real-life, context-specific problems; systematic exploration; design and experimentation (usually with iterative approaches); and long-term interaction between practitioners and researchers.

About the amount and quality of resources, teachers – the main actors in daily curriculum design – expressed, perhaps surprisingly, few explicit complaints. Even facilities and time for professional development seemed more or less acceptable, although the politeness of the teachers interviewed perhaps prevented them from expressing strong criticism. Other observers (outside schools) expressed that they thought teachers would need more time for professional learning, for example, by spending less time on classroom teaching and having more time available for professional learning. In particular, collaborative teamwork on school-wide curriculum arrangements and on strengthening pedagogical classroom repertoire was recommended.

The OECD team's impression is that there is some variation across the system in intensity and modes of teacher professional development. There also appears to be some variation in teachers' support from their school contexts, local authorities and the RICs (where applicable).

Conclusion

Scotland's Curriculum for Excellence was a bold initiative from its inception that has progressed and reached schools across Scotland. Its main vision and objectives are still relevant today. It remains valid for its bold, aspirational, future-oriented approach and continues to be an inspiring international example, with its four capacities focused on holistic student learning, which combines knowledge, skills and attitudes for the future. It has served as an example to many countries, and its key message strongly resembles the global vision on education as expressed in the Education 2030 vision of the OECD. CfE allows for reasonable coherence and seems to have been consolidated in Broad General Education for learners aged 3 to 15 years. It has been implemented and adopted across schools up to this age, where the concepts of CfE, the pedagogical approaches, the learning and assessments appear to be well consolidated.

Following two decades since its inception, Scotland should consider renewing its commitment to CfE's bold and relevant vision. A key challenge facing CfE is how to create more coherence and alignment between the curricular vision and goals for learning, a suitable pedagogy and adequate assessment approaches, especially in light of COVID-19, for student learning and progression across their school years. CfE has worthwhile ideals, and its implementation has been accomplished in primary and lower-secondary. The coherence of CfE enactment is less consistent, however, in the Senior Phase (for learners aged 15 to 18 years), where fundamental challenges exist for curriculum and subsequent assessment re-design. Without taking up the task of a re-visioning of CfE in the Senior Phase, the practices in upper-secondary education will keep lagging in its curriculum components (aims, pedagogy and assessment) and will exercise a counterproductive influence on Broad General Education and the transition for students.

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