

CHAPTER 1: CURRICULUM DEVELOPMENT PROCESSES

“We cannot become what we need to be, by remaining what we are.”
Max De Pree, 1987

Curriculum is the foundation of the teaching-learning process. The development of programs of study, learning and teaching resources, lesson plans and assessment of students, and even teacher education are all based on curriculum. Curriculum and curriculum development at first glance appear to be of chief concern to educators, governments and parents, and both have relevance and impact on the development of communities and prosperity. According to De Coninck (2008), curriculum, more than ever before, is now viewed as being at the centre of daily life and the responsibility of society as a whole.

Levin (2007) noted that curriculum documents were “a very large part of the work done by ministries of education in creating curriculum content (para. 1).” However, over time, Levin (2007) states that educational change is more complex, and “as governments have attempted to make large-scale changes,” curriculum change has become “less of an activity in its own right” and curriculum renewal has become part of a broader strategy for change in education.

Curriculum development today presents both a strategic process challenge as well as a policy challenge. For example, should the policy aim to teach what is of value, as embodied in subject disciplines, and for deep understanding in preparation for competing in the global economy? Or should policy aim for a personalized curriculum that recognizes students as active partners in their learning and develops their potential as a person? One response to the question could be “both” (Ackerman, 2003).

In Germany, for example, the 1997 Programme for International Student Assessment results revealed that education in Germany did not compare as well as other countries and the quality of education was assumed to be not as good. The curriculum policy response in Germany was to undergo a fundamental shift toward competencies, resulting in a curriculum with education standards at different levels for “the so-called subject-specific, personal, social, methodological competencies for each subject or subject area, and ... the compulsory competencies and content of the core curriculum” (Leyendecker & Letschert, 2008, p. 27). Schleicher (2011) states that high performing education systems are characterized as *knowledge rich* in which collaborative partnerships and leadership are essential to formulating policy. In Alberta (Alberta Education, 2011), the policy aims were set out as, *All students are inspired to achieve success and fulfillment as engaged thinkers and ethical citizens with an entrepreneurial spirit.*

There are many models for curriculum development. Generally, as a process, curriculum development is concerned with reviewing, planning, developing, implementing and maintaining curriculum⁴ while ensuring that the stakeholders engaged in this process have a high level of commitment to and ownership of the curriculum. In formulating policy, the challenge lies in the discourse on the form, content, aims and goals of curriculum, often referred to as curriculum orientations (Eisner & Vallance, 1974, as cited in Joseph, 2011). These curriculum orientations have a profound impact on roles of stakeholders, parents, educators and students as they relate to vision and practice, decision making, curriculum planning, development, implementation and evaluation. These orientations or “cultures” of curriculum, in turn, have an impact on the curriculum development process (Joseph, 2011). Given the importance of curriculum, a number of questions arise, “How is curriculum developed, who develops it, and how are curriculum development processes evolving?” However, before these questions can be answered, the first question that needs to be asked is, “What is curriculum?”

Surprisingly, there is no fixed definition of curriculum (Sahlberg, 2011). The word *curriculum* is derived from the Latin verb *currere* which means to run.⁵ As Sahlberg notes, in Anglo-Saxon countries curriculum refers to what students should learn, within a framework of goals, objectives, content and pedagogy. In countries such as Sweden (*läroplan*), Holland (*leerplan*) and Germany (*Lehrplan*), curriculum is defined as a “plan for learning” (Taba, 1962, as cited in Thijs & van den Akker, 2009). Curriculum can also be “concerned with what is planned, implemented, taught, learned, evaluated and researched in schools and at all levels of education” (McKernan, 2008, p. 4). This latter definition of curriculum is seen to be more as a process rather than just a product.

Johnson (1967) defines curriculum as a “structured series of intended learning outcomes” that prescribes the results of instruction. Curriculum is, therefore, viewed as an output of the development process. Research in curriculum development has focused more on improving the process of curriculum than on curriculum theory, which aims to better understand the educational significance of what students are learning (Pinar, 2004).

Given that there are a number of activities related to curriculum, distinctions among various levels of curriculum activities (e.g., policy, design and development, implementation) and the level of curriculum development (van den Akker, 2007, pp. 37–38) provide deeper understanding of curriculum products. The analysis in Table 1 reveals that curriculum is more than a process; it is also a product. These products may vary in scope and in detail. Curriculum development can be viewed narrowly (e.g., developing a specific curriculum framework) or more broadly (as an ongoing process of improvement that takes into account teacher education and assessment programs). The problems of decision making and implementation of curriculum are complicated by a long cyclical process, which often involves many stakeholders, typically with their own perspectives and interpretations of curriculum. Additionally, as Levin (2007) notes, “everyone in society wants her or his particular interest included in the work of the

⁴ These terms can be defined in this way: reviewing (identifying what is working well, issues and concerns), initiating (development of proposal), planning (development of project plan), developing (development and field test of program of studies), implementing (authorization of program of studies and resources, and orientation for teachers), and maintaining (support and sustain, monitor feedback).

⁵ Latin derivation obtained from <http://www.thefreedictionary.com/curriculum>

school, putting pressure on governments to include more and more in the curriculum. Increasing social diversity has also led to calls to add more content” (para. 7). He further notes that the problem is compounded by the typical curriculum development process where teams of “experts tend to want more and more complex elements of their own disciplines or subject areas included in the curriculum” (para. 8).

Table 1: Levels and Curriculum Products (Adapted from Thijs & van den Akker, 2009)

Level	Description	Examples
Supra	International	<ul style="list-style-type: none"> Common European Framework of References for Languages. Usually “generic” in nature. Examination programs; e.g., Third International Mathematics and Science Study or Programme for International Student Assessment or Progress in International Reading Literacy Study.
Macro	Provincial, national, regional	<ul style="list-style-type: none"> Intended core objectives (specified in a curriculum framework and/or program of studies). Authorized learning and teaching resources. Attainment levels. Examination programs; e.g., Pan-Canadian Assessment Program.
Meso	School jurisdiction, school	<ul style="list-style-type: none"> School program (locally developed courses). Educational program with an emphasis on specialized school-based activities (e.g., specific focus on arts, sports, or academics). Site-specific learning and teaching materials developed, identified and accessed.
Micro	Classroom, teacher	<ul style="list-style-type: none"> Instruction plan for module or course. Learning and teaching materials.
Nano	Student, individual	<ul style="list-style-type: none"> Individualized learning plan. Individualized course of learning or learner pathways.

Curriculum development at national or regional levels that is focused on curricular frameworks, as mentioned above, or on assessment programs is a reflection of government policy. Since governments are, for the most part, responsible for the quality of education, the central challenge for curriculum development is addressing multiple societal expectations relating to educational content and learner outcomes in well-balanced and articulated frameworks. To monitor and report on the quality of educational outcomes and outputs (e.g., number of high school graduates), periodic assessments, such as Programme for International Student Assessment or Pan-Canadian Assessment Program, are undertaken. Clearly, the model or approach to curriculum development at the national or regional levels will be different from that which occurs at the school-based level, which is more of a practical process that is part of the lived experience of the school community (Kennedy, 2010). As Thijs and van den Akker (2009) note, the processes for curriculum development are more focused on building

synergy among curriculum development, teacher development and school organization development, in responding to community concerns, needs and conditions.

THEORETICAL FOUNDATIONS

Regardless of whether curriculum development is taking place at national or regional levels or at the school level, at its core, curriculum is a plan for learning that students will encounter and experience in a variety of learning environments. Curriculum development, as a process, continually strives to find newer, better, more effective and efficient means of improving the quality and relevance of education. As such, processes for curriculum development include reviewing, planning, developing, implementing and maintaining curriculum.

A major challenge for curriculum development is to define the components that will comprise the curriculum, and the three major planning elements involve content, purpose and organization of learning (van den Akker, 2007, p. 38). The relevance of these components, as identified in Table 2, can vary depending on the previously mentioned levels of curriculum. For example, learning environments are of greater relevance at a micro or nano level, while international assessment programs such as Trends in Mathematics and Sciences Study or Programme for International Student Assessment are often of greater relevance to policy makers at provincial and Pan-Canadian levels.

Table 2: Components and Related Questions (Adapted from Thijs & van den Akker, 2009)

Component	Related Question
Program Rationale or Vision	Why are students learning what they are learning?
Program Goals and Objectives	What are the goals, aims and objectives of what they are learning?
Program/Course Content	What are they learning? (e.g., competencies, knowledge, skills)
Learning and Teaching Resources (print and/or digital)	What are they using to learn? (e.g., print and/or digital resources, reference materials)
Learning Activities	How are they learning? (e.g., simulations, discussions, design and build)
Instructional Time	When are they learning?
Teacher's Role	How is the teacher facilitating learning?
Student Groupings	With whom are they learning? (e.g., age, grade, other groupings)
Location	Where are they learning? (e.g., classroom, online, work experience)
Assessment	How is learning measured? (e.g., <i>of</i> , <i>as</i> and <i>for</i> learning)

The approach taken to date of what to include in curriculum (program of studies) has been to balance the three following priorities (Thijs & van den Akker, 2009):

- Knowledge – what academic and cultural heritage is essential for learning and future development? (e.g., history, geography, science, literature, languages).
- Society – which issues should be included given societal and global trends and needs? (e.g., global warming, other environmental issues, sustainability).
- Learner – which elements are of importance for learners' personal and educational needs and interests? (e.g., competencies, requirements for post-secondary study, careers).

Providing responses to the previous questions requires navigating through diverse stakeholders and interest groups to arrive at a coherent curriculum that is not overloaded or fragmented because of a large number of separate subjects. Public pressure, resulting from unfavourable media reports on students' supposedly inadequate knowledge of something, often leads to the addition of content in curriculum or the development of too many separate courses that most schools are unable to offer (Levin, 2007). As well, curriculum of today is striving to be "more challenging and intrinsically motivating" and move toward instruction that is more meaningful and autonomous (Thijs & van den Akker, 2009). The overloaded curriculum does not respond to students' interests and teachers feel pressured to cover the curriculum that may be pitched at a level that is too high for students to achieve (Levin, 2007).

Additional challenges in curriculum development often arise from gaps between the *intended curriculum* (policy, vision, rationale and philosophy underlying a curriculum), the *implemented curriculum* (curriculum as interpreted by school administration and teachers; the process of teaching and classroom practices) and lastly, the *attained curriculum* (learning as experienced by learners, resulting from defined learning outcomes for students). If a curriculum revision process is overly ambitious, is carried out within short timelines and is within an environment of low investment in teachers, problems will inevitably arise. A particular curriculum may include knowledge and require pedagogy that teachers may or may not have. To address this problem, education systems provide "professional development for teachers, but it is highly unlikely, given the amount and variety of curriculum content, that we can provide enough support to enable most teachers to teach most subjects with a very high level of content and pedagogical knowledge" (Levin, 2007, para. 14).

Further, if there is poor planning and linking with other system components, such as assessment programs and learning and teaching resources, problems will arise. When problems and tensions do arise, participants tend to engage in blaming each other for problems in the education system. Thus, curriculum needs to be thought of as a web of interrelated and aligned activities dedicated to achieving common learning goals (Thijs & van den Akker, 2009) as identified in Figure 1.

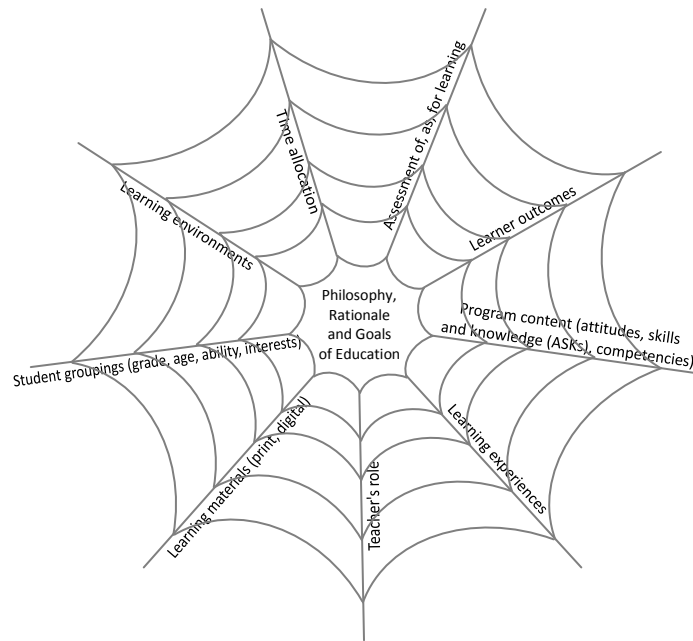


Figure 1: Web of Interrelated Learning/Curricular Activities (Adapted from Thijs & van den Akker, 2009)

Curriculum developers face many uncertainties in a complex task undertaken within very dynamic contexts (Thijs & van den Akker, 2009). Curriculum developers want theoretically underpinned and empirically tested development principles and methods. Unfortunately, current research, with its focus on descriptive knowledge, does not provide developers with useful solutions to their problems. These problems usually arise from the ambitious and complex nature of reform policies that affect many facets of education at multiple levels, ranging from macro level policy formulation to micro level realization. As Levin (2007) notes, “curriculum, when done well, can be a mainstay of effective teaching and learning, but if we are naïve about the real pressures on school curricula we are unlikely to be able to achieve our educational goals” (para. 17). Caskey (2002) notes that coherent, integrative and democratic curriculum requires a great deal of thought and is a time-intensive activity. Success in achieving educational goals, therefore, depends upon careful planning and implementation of these activities in a range of levels and contexts.

Sahlberg (2006) makes the following observations about curriculum:

- Curriculum development is an ongoing process and not just a product. Further, curriculum development can no longer be viewed as a project that has a start and an end. In today’s rapidly changing world, the curriculum designed today and implemented in the years to come could still be responsive and relevant in five years conceptually but specific facts may not be so. Curriculum should be viewed as a “living, organic instrument to help teachers and schools to find optimal ways to educate” students (p. 8).

- Curriculum lies at the heart of educational enhancement policies, geared to quality improvement. Curriculum should support teachers in developing their schools, increasing access to all students and raising the quality of the learning-teaching process. To achieve this, qualified experts are required to lead the process that is based on consensus and aligned with accepted policy defining the purpose of curriculum.
- Direct copying or transfer of curriculum from another jurisdiction as a means of addressing mobility and qualifications, without taking into account cultural and political differences, teaching traditions and provision of education, is not advisable.
- Finally, curriculum development processes require expertise and continuous production of new knowledge of these processes. As such, it requires that well-resourced and well-equipped research structures be in place (Joyce and Showers, 1995, as cited in Sahlberg, 2006, p. 9). Stronger research is needed on potential directions (path finding) and curriculum models of development with systematic follow-up and analysis of implementation of curriculum in schools.

This last point underscores the importance of viewing curriculum development as a process and not just a static product.

Models for Curriculum (Programs of Study) Development

Models can be defined as interacting parts that serve to guide actions (Lunenburg, 2011). In the case of curriculum development, there are several models that exist. In many ways, these models are more similar than different and often only differ in the elements that comprise the model. Most models have a cyclical process, characterized as analysis, design, development, implementation and evaluation. Where these models do differ is in the process of development which, to some extent, will reflect the curriculum orientation. An analysis of models and their strengths and weaknesses is a useful analytical tool for the curriculum specialist developing curriculum, and points to the need for planning regardless of the model used.

Thijs and van den Akker (2009, pp. 16–19) describe four basic models of curriculum development that are summarized in Table 3.

Table 3: General Characteristics of Four Curriculum Development Models

Curriculum Orientation	Instrumental	Communicative	Artistic	Pragmatic
Elements				
Description	<p>Based on the Tyler model (1949) and further elaborated by Taba (1962) and emphasizes a goal-directed approach to design.</p> <p>Systemic development process based on thorough analysis. Clear measurable objectives for the development process are formulated (i.e., the step-by-step planning process allows for the formulation of clear, measurable objectives for the development process).</p> <p>This approach has been described as technical-scientific (Ornstein & Hunkins, 2009).</p>	<p>Based on the Walker model (1971, 1990) to address the complex practice of negotiating desired features of curriculum products.</p> <p>The development process is primarily a social process that emphasizes the importance of relational strategies; i.e., to build relationships with stakeholders and solicit input, starting with the subjective perceptions and views of developers and various stakeholders, including students. Deliberation and negotiation are central to this orientation.</p> <p>This approach is similar to Glatthorn's Naturalistic Model and the Deliberation Model that build a constituency and acknowledge the social dimension of curriculum development processes.</p>	<p>Based on Eisner's (1979) concept of <i>connoisseurship</i> that emphasizes the developer's creativity.</p> <p>This holistic systemic-aesthetic approach assumes that the developer is an artist, who creatively anticipates from his or her own vision, intuition, taste and experience the identification of what is educationally relevant. There are no objective criteria or fixed processes to follow.</p> <p>This approach has been described as nontechnical-nonscientific (Ornstein & Hunkins, 2009) and also shares some characteristics with post-positivist/post-modern methods, where curriculum continuously renews itself through human experience and a social and emergent manner and not through a specific model.</p>	<p>This approach focuses on the practical use of curriculum products.</p> <p>Curriculum development requires close interaction with local practice and those who actually use the product.</p>

Curriculum Orientation	Instrumental	Communicative	Artistic	Pragmatic
Elements				
Development Phases and Process	<p>This orientation is comprised of four key elements.</p> <ul style="list-style-type: none"> ▪ Identification of purpose or diagnosis of need: <i>Which objectives should be the aim of education?</i> ▪ Identification of learning/teaching experiences or selection of content: <i>Which learning experiences are most suitable to achieve the stated objectives?</i> ▪ Organization of learning and teaching experiences or content and learning activities: <i>How can these objectives be organized effectively to meet the identified learning experiences?</i> ▪ Evaluation of the objectives: <i>How do we know the objectives have been achieved?</i> 	<p>This orientation is comprised of three phases.</p> <ul style="list-style-type: none"> ▪ Phase 1—Definition of need or problem: <i>Curriculum developers and other stakeholders present their views and opinions on problems, with a view to achieve consensus.</i> ▪ Phase 2—Deliberation: <i>Curriculum developers and other stakeholders brainstorm possible solutions to identified problems to arrive at the most desirable solution(s).</i> ▪ Phase 3—Design: <i>The results of the deliberations carried out in Phase 2 are used to draft the final product(s).</i> 	<p>This approach considers the following dimensions of curriculum:</p> <ul style="list-style-type: none"> ▪ Intent: <i>A review and identification of what really matters in schools; i.e., learning objectives.</i> ▪ Structure of Schools: <i>A review of how schools and learning environments are and can be structured, how roles are defined and how time is allocated to facilitate learning opportunities.</i> ▪ Curriculum: <i>The design must include ideas that matter, skills that count and strategies that engage students in the learning process.</i> ▪ Pedagogy: <i>Quality of teaching is of primary concern, and requires support, scrutiny and assistance. Schools must serve teachers, if teachers are to serve students.</i> ▪ School-based Evaluation: <i>Based on defining what</i> 	<p>At the core of this orientation is formative evaluation where the development and evaluation process occur in an interactive manner.</p> <ul style="list-style-type: none"> ▪ Preliminary Study: <i>Experts and literature are consulted and a rough draft of possible products is developed fairly quickly.</i> ▪ Prototyping: <i>Specifications of the prototype are generated and a prototype is developed to undergo rounds of design, evaluation and revision. During this phase, there is close interaction with the schools and school community to gear the products and possibilities to end users.</i> ▪ Deployment and Evaluation: <i>Moves from prototyping to deployment of curriculum products. The evaluation process means that a curriculum product is never really finished, as it will be periodically</i>

Curriculum Orientation Elements	Instrumental	Communicative	Artistic	Pragmatic
			<i>really matters for students. Teachers and school administrators approach evaluation as continuous improvement.</i>	<i>revisited, assessed and revised.</i>
Process Activities Sequence	Logical.	No strict sequence.	Completely open process.	Cyclical.
Main Characteristics of Process	Rational process.	Intensive deliberation in identifying needs, and in seeking input and advice during the development process.	The entire process revolves around creative reflection.	Frequent evaluation by and with end users.
Definition of a “Good” Curriculum	Meets predetermined objectives or requirements.	Meets requirements achieved through broad consensus-building.	Meets the developer’s requirements.	Meets the user’s requirements.
Strengths	Complex development processes reduced to a few questions. Rational, fact-based and goal-directed approach.	Broad social support for curriculum as stakeholders are given ample opportunity for input and advice. Stakeholder engagement in the planning and development stages empowers and acknowledges them, especially teachers, as valuable contributors.	Ongoing revision of curriculum is made meaningful and possible, as emphasis is on creative interaction with curriculum in practice, especially at school and student levels.	Increased ownership and practical usability of the curriculum product(s).
Challenges	Emphasis on attainment of predetermined objectives leaves little flexibility for adjustments to be	The processes for deliberation can be time consuming and resource intensive, and can result in curriculum products that may not be	The particular view of the developer and focus on a specific context (e.g., classroom, school or subject) can result in curriculum products	The close interaction with end users can be challenging, at times; for example, if the users’ wishes vary greatly (e.g., beliefs on the use of

Curriculum Orientation	Instrumental	Communicative	Artistic	Pragmatic
Elements	made. Is limited to factual/empirical data. Does not reflect personal views, opinions and socio-political aspects that are important to curriculum. Relegates the art and informed practice of teaching to a technical process based on built-in procedures.	consistent and aligned internally. Consensus is often hard to achieve when developing curriculum at national or regional levels.	with a narrow scope.	worksheets in mathematics) or are difficult to combine with the insights of experts and what has been identified in the research literature; e.g., strengths of problem-based learning.

Each of the four models described above contains valuable elements that can be considered for curriculum development. The model used for curriculum development is influenced generally by the level at which the development is occurring. For example, for Pan-Canadian or regional curriculum development the models used are often derived from the instrumental or communicative model, as frameworks and specific learning objectives are the key aim of these development activities, and consensus among partners is a desired outcome. At the local or school level, the artistic model is best suited for curriculum development since there is more flexibility as the locus of control resides at these levels.

The scope of the curriculum product(s) also determines the model to be used. For example, for more “generic” products (e.g., curriculum frameworks or national assessments of literacy and numeracy), the instrumental or communicative approach may be especially useful as specific aims need to be achieved. The artistic or pragmatic models may be more suited to the development of context-specific curriculum product(s) for which a specific user has been identified (e.g., locally developed courses and learning resources, assessments *for* and *as* learning).

Finally, the composition of the team involved in the development process can have an impact on the product. For example, an individual working alone or a small team has more latitude for creativity but may be restricted by the amount of experience and knowledge he or she may have on pedagogy and practice. On the other hand, larger teams of developers lend themselves more readily to an instrumental and/or communicative development model (Thijs & van den Akker, 2009).

IN PRACTICE

The following information reflects what is occurring in current curriculum design and development processes used by Canadian and international jurisdictions, and is presented according to three themes: 1) consistency and commonality in the design of programs of study; 2) strategies and practices for developing and updating curriculum; and 3) the role of government and level of stakeholder involvement and engagement in curriculum development.

Theme 1: Consistency and Commonality in the Design of Programs of Study

Consistency and commonalities in the way in which programs of study are designed and developed can be a desirable characteristic. This process allows for teachers and other stakeholders, such as students and parents, to have better access to the learning outcomes. The following section provides an overview of what is currently happening in Canada and in other jurisdictions in the world.

Canada

The Saskatchewan Ministry of Education has recently revised its curriculum development process to include the use of common templates for every subject area. These templates have common front matter and contain three broad areas of learning: Building Lifelong Learners, Building a Sense of Self and Community, and Building Engaged Citizens. In Saskatchewan, this is a result of a conscious decision by the government to clarify expectations and ensure consistency in programs of study (Saskatchewan Ministry of Education, 2010, p. 1).

The Manitoba Ministry of Education develops curriculum frameworks that include outcomes and standards. All documents, published mostly in print form, with a movement toward electronic versions, are comprised of an overview, description of the discipline, a rationale, a philosophy, and two levels of learning outcomes (general and specific). All documents also include information on the foundational skill areas of literacy and communication, problem solving, human relations and technology (Manitoba Education, n.d.).

From a review of the Ontario Ministry of Education's (2010) website, it is also evident that programs of study follow a common format and include a common front matter and common elements and skills.

The British Columbia Ministry of Education (2012) has begun a *curriculum redesign* that will include an internal and external review involving a first draft that will be reviewed internally within the ministry. The second draft or "Response Draft" will be used with external stakeholders and other government ministries. Internal review guidelines have been developed to guide reviewers as they provide feedback.

Australia

For the first time in its history, Australia is moving to a national curriculum. This move created the need for an organizational authority to create new programs of study for its member states. A document entitled *Curriculum Design*, developed by the Australian Curriculum, Assessment and Reporting Authority, provides information to guide the writing of the Australian national curriculum, including common elements, design considerations and technical specifications. It also includes instructions on specific actions that need to be taken when drafting curriculum. The common elements are rationale, aims of the learning area, organization of the “learning area” curriculum, general capabilities (competencies), and cross-curriculum dimensions (infusion of Indigenous perspectives and knowledge of Asia and Australia's engagement with Asia).

In addition, the following design considerations were identified as key to the development of new Australian programs of study: the nature of the learner and learning (consideration for developmental appropriateness); the relationship of the learning area to other curricular areas as a whole; structural matters relating to commencement and completion of school and transition points; inclusivity of diverse student needs; description of the connection between the learning outcomes and the capabilities (competencies), and inclusion of cross-curricular dimensions. Each design consideration has defined parameters for curriculum development through key considerations and actions to be taken. A section entitled technical specifications outlines the specifics around each design consideration, including achievement standards. For example, for the rationale, a definition is provided and directions for content development are indicated. In this case, the maximum number of words is 200 and the target audience is Kindergarten to Grade 12.

The *Australian National Curriculum Development Paper* (Australia National Curriculum Board, 2008), indicates that the content will provide:

- a rationale that explains why the content is important
- aims and objectives for teachers and students
- description of how the content is organized
- the knowledge, understanding and skills that students are to acquire.

The curriculum is also expected to be clear about what has to be taught and what should be learned at each stage of schooling, to be based on reasonable expectations of time and resources, to be flexible and to be developed collaboratively with schools and jurisdictions. The Australian National Curriculum is intended to provide an outline of what students should learn. However, it is the teachers who will ultimately decide on how best to organize learning, the contents for learning and the overall depth of learning that will take place for each student (Australian Curriculum, Assessment and Reporting Authority, 2010a).

England

In January 2011, the Secretary of State for Education announced a major review of the national curriculum (ages 5 to 16) in England. This review was necessitated by the rapid economic and technological changes and declining student achievement in international assessments (England Department for Education, 2011b). The review by an expert panel conducted an international comparative research and presented its findings in December 2011.

Currently, in England, the school curriculum has the following structure. *The Framework for the National Curriculum: A Report by the Expert Panel for the National Curriculum Review* (England Department for Education, 2011a) makes the following statements:

- The national curriculum is the statutory core and foundation subjects required to be published by the Secretary of State for Education. This includes the programs of study and the attainment targets for core and foundational subjects (pp. 18–19).
- The basic curriculum is also a statutory requirement in addition to the national curriculum that includes religious education, sex education and work-related learning, and schools have the flexibility in implementing the requirements.
- Local curriculum complements the national and basic curricula with school and community needs. Local curriculum supplements other areas of learning in vocational learning, and allows for additional extension and contextualization of the national curriculum. School and communities can, therefore, determine the programs they feel are most appropriate (p. 19).

Recommendations in *The Framework for the National Curriculum: A Report by the Expert Panel for the National Curriculum Review* (England Department of Education, 2011a) to revise the National, Basic and local curricula include:

- The national curriculum should remain a combination of core and foundation courses, and specify, in detail, the “essential knowledge in core subjects but focus on a more limited set of significant expectations” for foundation subjects (p. 20).
- The core subjects should include:
 - English, mathematics and science (p. 25).
- The foundation subjects should include:
 - geography, history and physical education (Key Stages 1–4); art and design, and music (Key Stages 1–3); and modern foreign languages (Key Stages 2–4) (p. 25).

The report also makes recommendations for a common structure for programs of study. These recommendations are as follows:

- The key stages structure should be modified, as some are too long (Key Stage 2), and be split into two stages. They propose to use the key stage structure over a year-by-year (i.e., grade-by-grade) based specification of what is taught, learned and assessed (p. 8), and recommend that local authorities who wish to continue to use the year-by-year approach do so at their level.

- Programs of study must establish a “very direct and clear relationship between *that which is to be taught and learned* and *assessment* (both formative and ongoing and periodic and summative)” (p. 9).
- Programs of study should include statements of “purposes, anticipated progression and interconnections within the knowledge to be acquired, with attainment targets being stated as statements of specific learning outcomes related to essential knowledge” (p. 9).
- Using two columns, the programs of study could present the developmental description of the key concept on the left-hand side, and the essential learning outcomes to be assessed at the end of a key stage (attainment targets) could be represented on the right-hand side column (p. 9). These attainment targets would be closely aligned to the content and would be few and concise and would focus on essential learning outcomes (p. 43).
- In primary education, the focus should be on depth and that all students have the appropriate understanding before “moving to the next body of content” (p. 9).

Other recommendations pertaining to curriculum included that the design of curriculum should have a clear purpose, so as to ensure congruence and coherence for the alignment of resources, hiring of teachers, pedagogy, assessment and inspection of schools (p. 13).

Finland

Finland moved to the development of a new national framework in 1994, and revised the framework in 2004, as the government became more aware that, as a result of a decentralized public administration, teachers were not using curriculum documents. The national core curriculum creates cohesion and consistent goals, values and direction. The 2004 framework describes learning experiences, rather than being content specific. The national core curriculum has two roles: it is an “administrative steering document ... [and] a tool for teachers to develop their own pedagogical praxis” (Vitikka, Krokfors & Hurmerinta, 2012, p. 1). Each municipal district develops its own curricula. Schools and teachers determine curriculum implementation, providing them with more autonomy and choice at the local level to meet diverse student needs (Finnish National Board of Education, 2004). The framework is comprised of “general educational aims, objectives and contents of different subjects as well as the principles of pupil assessment” (National Board of Education, 2001, p. 21). For each subject area, the national core curriculum provides a description, objectives, core content, a description of good performance for the end of sixth grade and final assessment criteria (Finnish National Board of Education, 2004). According to Sahlberg (2011), the new framework enhances school improvement as schools can progress at different paces, allowing for diversity in programming and for teachers to become more engaged in the process as they develop communities of practice.

Germany

As noted earlier, curriculum reform in Germany resulted in curriculum policy with a competencies orientation and in a change of paradigm in curriculum policy by moving away from an input-based approach to an output-based approach, focused on continuous quality monitoring. The Standing Committee of the Ministers of Education and Cultural Affairs of the federal states *Kultusministerkonferenz* began to formulate national standards (learner outcomes) for mathematics,

German language and the first foreign language for grades 7–10 in 2003, and, in 2004, began to establish national standards for biology, chemistry and physics. Standardized tests to measure competencies were also developed. All 16 states agreed to comply with the standards which formed the framework for revision of state curricula (Leyendecker & Letschert, 2008).

To address the significant paradigm shift to competencies, the Berlin Ministry of Education developed new curriculum frameworks (*Rahmenlehrpläne*) and provided a number of specifications to the Institutes for Schools and Media for the development of the *Rahmenlehrpläne* to ensure uniformity (Leyendecker & Letschert, 2008). These included:

- a common layout and format with a list of contents for all *Rahmenlehrpläne* to follow. For example, the curriculum for primary education has a common structure with the following components:
 - introduction to education
 - subject area and competencies
 - description of standards
 - topics and content
 - assessment
- adherence to the competency model, with reference to competencies articulated by the Organisation of Economic Co-operation and Development
- articulation of standards that are specified in terms of student activity and student-centred instruction, along with exemplary tasks
- essential subject matter content from existing curricula
- inclusion of cross-curricular aspects
- competencies for bilingual instruction
- required content and topics with the provision of optional or additional content and/or topics.

The *Rahmenlehrpläne* are also intended to be user-friendly in regard to comprehension and readability, as they are meant to be shared with parents to actively support the learning of their children and to orient students.

New Zealand

New Zealand began a very lengthy curriculum revision process for their national curriculum beginning in the 1990s. The decision was made to have a national syllabus that was general in nature, so that at the local level they could adapt the broad guidelines, defined in the curriculum document as outcomes-focused, to meet the needs of their students. This was a philosophical change from the dozen or more specific syllabi and guidelines that pre-dated the 1990s curriculum overhaul. The current curriculum document (New Zealand Ministry of Education, 2007) describes, in a succinct manner, what each learning area is about and how the learning is to be structured. The key elements defined in the national document are the vision, principles, values, key competencies, official languages and effective pedagogy. The elements provide schools with the scope, authority and flexibility they need to take the national curriculum and shape it to meet their local needs. The entire curriculum document, with programs of study for all subject areas, is a single 45-page document, which provides a one to two page

description of what each learning area is about, why it should be studied and how it is structured (New Zealand Ministry of Education, 2007).

The New Zealand curriculum describes the overall direction for teaching and learning in New Zealand schools. It represents a framework, as opposed to a fully comprehensive learning plan. Although schools are obligated to align their curriculum with the principles contained within the New Zealand curriculum, schools are given sufficient latitude to plan programs to meet local school needs (New Zealand Ministry of Education, 2007).

The curriculum is not time-structured and, as such, schools may deliver a broad and balanced overview of the curriculum through a number of different methods. There are no established rules in place with respect to timetabling or the amount of time that schools must allot for teaching each subject area, albeit English and mathematics are required to be taught each school day in the majority of primary schools (INCA, 2008a).

Korea

Korea has a national curriculum in place that is revised periodically to attend to the needs and demands of a changing society. The national curriculum is compulsory for all schools from Kindergarten to upper secondary education, including private schools. The national curriculum details set regulations for the number of school days, the subject areas that will be covered, as well as the time allotted for teaching each subject area in a given school year. There is, however, some flexibility given to either local education authorities or individual schools to:

modify the national curriculum or to develop new subjects, based on the needs and circumstances of the school and local communities and on the interests of students, teachers and community members. This decentralized policy was continued in the seventh curriculum revision. It is intended that, by giving more autonomy to schools and local authorities, curricula will become more appropriate to individual schools and students, and will contribute to increasing the diversity of educational programmes (INCA, 2011b, para. 8).

The national curriculum also specifies that the criteria are followed when developing textbooks and it outlines broad-based guidelines for teaching and learning activities and methods of assessment (INCA, 2011b).

Theme 2: Strategies and Practices for Developing and Updating Curriculum

Another aspect of curriculum development involves determining what constitutes the need for curriculum review or an overall change. The following provides insight into some of the conditions that cause a jurisdiction to undertake a review of curriculum.

Canadian Jurisdictions

Provincial and territorial jurisdictions involved in standardized curriculum development often refer to this aspect as *triggers* for curriculum change. Jurisdictions across Canada use a wide variety of timelines and criteria for updating their curricula. There are a number of factors that typically initiate curriculum revision in Canada. These are:

- changes in government policies
- emerging socioeconomic issues (e.g., British Columbia's low graduation rate of Aboriginal students)
- influence of research findings
- age of existing curriculum
- stakeholder and educator feedback
- significant changes in subject or discipline content (e.g., the fall of the Berlin Wall) and/or the age or availability of learning and teaching resources.

A few provinces have established schedules for curriculum revision. In Ontario, revisions occur every seven years, in Prince Edward Island they occur on an ongoing three-year cycle and in Newfoundland and Labrador they occur on a five-year cycle.

International Jurisdictions

The approach used to develop curriculum varies widely among international jurisdictions. The following section describes a few jurisdictions that have undertaken curriculum change within the last decade and the circumstances or conditions that initiated (triggered) these reviews.

Australia and New Zealand

Australia has a detailed curriculum development process document that outlines four steps in the development process: Curriculum Shaping, Curriculum Writing, Implementation, Curriculum Evaluation and Review.

New Zealand's curriculum development process can be described through triggers leading to discovery, design and development, implementation and evaluation. Triggers identified in New Zealand include the elapsed time since the previous development, satisfaction of teachers, student performance on national and international tests, and research. The Australian Curriculum Shaping phase corresponds to the Discovery Phase in New Zealand. It entails planning, research and an advice paper outlining objectives, general capabilities, organization and other aspects.

In Australia, processes used previously for state and territorial level curriculum development, such as advisory groups and regular face-to-face meetings, were not scaled up at the national level due to the expense and complexity. As a result, one of the requirements for national curriculum development is robust and dynamic communication channels to ensure transparency and provide for information exchange, input and commentary from all interested parties.

The National Curriculum Board sets the writing guidelines for subject area/discipline content. Curriculum development in each subject area/discipline is led by a national subject chair, appointed by the National Curriculum Board, and supported by national reference groups. Draft curriculum documents are written by specialists recruited to a national writing pool. State and territory authorities and school organizations provide formal feedback on overall directions and on draft documents through a closed online web application. Development work is managed by project officers.

Belgium (Flanders)

With the decree of 1991, attainment levels and objectives for curriculum were developed. These attainment levels and objectives are the frame of reference for curriculum development, describing a minimum level for schools and students. However, schools are given a great deal of leeway in interpreting these attainment levels.

As a first step, the Department of Educational Development draws up a design for the curriculum. The role of the department is to use an independent and objective approach developed by expert working groups comprised of educators. This is done to ensure the design is both feasible and realistic. During this stage, the Flemish Advisory Council for Education provides advice to the minister of education. The advice provided by the advisory council is based on input received from participants, such as schools, trade unions, parents and students, and, during the early stages, other sectors besides the educational sector are also consulted. A broad social debate is initiated and within the Department of Educational Development an information and communication work group for attainment levels is established.

During the decision-making stage, the Flemish government then decides whether to present the proposal and advice from the Flemish Advisory Council for Education to the Flemish parliament for approval. In case of agreement, this will occur within a month; in case of disagreement, the dossier will be referred back to one of the previous stages for a new proposal. Finally, the Flemish parliament will confirm the attainment levels, if necessary, after amendments have been made.

England

As noted earlier, in January 2011, the Secretary of State for Education announced a major review of the national curriculum in England. The process of review, led by the Department for Education and supported by an advisory committee (comprised exclusively of educators and a review panel made up of teachers, academics, business and industry), provided insight into strategies and practices for future curriculum development.

The advisory committee's role is to support the Department of Education in carrying out the review and in framing the final recommendations, with the goal of offering a wider perspective on the proposals put forward by the expert panel on strategic issues arising from the review. One of the major objectives of the review is to give teachers more autonomy on how they plan and teach the curriculum. As well, there is a desire to enable parents to better understand what their children are learning, so they may support their education. One of the rationales for the review is that the government hopes to reduce "unnecessary prescription, bureaucracy and central control throughout the education system" (England Department of Education, 2011b, p. 3).

Given the scope and the challenge of the review, the government decided to extend the timetable, so that the implications for and recommendations by the expert panel could be debated further by teachers, governors (school trustees), academics, business and parents, and so that schools have more time to prepare for a new curricula. Instead of new curricula for English, mathematics, science and physical education being implemented in 2013—and any other subjects in 2014—new curriculum for all subjects will now be implemented in 2014.

The draft programs of study will be sent to the Secretary of State for Education, the Minister of State for Schools, the Minister of State for Further Education, Skills and Lifelong Learning, and other members of the Ministerial team in the Department for Education for consideration, followed by public consultation. It would appear that the Department for Education is committed to consulting with a range of stakeholders in developing programs of study and intends to “organize a series of consultation events for key stakeholders and work to ensure head teachers, classroom teachers, parents and others are able to contribute to the work of developing the new national curriculum” (England Department of Education, 2011b, p. 7).

Scotland

In 2002, the Scottish parliament committed to a collaborative approach to educational reform (Hooghoff & Bron, 2008, p. 12). Preliminary work on curriculum development was limited to the main professional institutions, such as the Scottish Qualifications Authority, school boards, universities, teachers and head teacher representatives (Hooghoff & Bron, 2008, p. 25).

From the National Debate on Education in 2002 through to the drafting and preparation of the experiences and outcomes for publication, teachers were asked to contribute their knowledge and expertise to the process. Writing teams of practitioners were formed for each curriculum area, brought in, on secondment, from the classroom and other posts in education to Learning and Teaching Scotland to develop the experiences and outcomes. Throughout, they worked in collaboration with colleagues from the Scottish government, HM Inspectorate of Education and Scottish Qualifications Authority.

The teams drew upon evidence of effective practice in Scotland and beyond, research and international comparisons. One of the main responsibilities of members on the development teams was to ensure that, throughout the process, they drew on the expertise and advice of a wide range of staff in early learning centres, schools, universities, colleges and across all settings where learning takes place. They did this at meetings, events, seminars and focus groups, picking up ideas and case studies of good practice. They maintained contact with subject networks and other specialist forums.

Learning and Teaching Scotland published the proposed experiences and outcomes in draft format to give practitioners and wider stakeholders the opportunity to comment. There was further extensive engagement during the refinement process leading up to publication.

The curriculum guidelines were subjected to a rigorous quality assurance process to ensure they would meet the needs of learners and that they were in keeping with the purposes and principles of *Curriculum for Excellence*. The Curriculum for Excellence Management Board, made up of organizations which have national roles in Scottish education, has overall responsibility for delivering the program. The

organizations involved include the Scottish Government, the Association of Directors of Education in Scotland, Learning and Teaching Scotland, the HM Inspectorate of Education and the Scottish Qualifications Authority (Education Scotland, 2012).

Learning and Teaching Scotland published the draft experiences and outcomes in stages for engagement and trialing (piloting). The main purpose of this activity was to gather views on the draft experiences and outcomes, in order to further develop and make improvements in response to those views. In addition, engagement and trialing was an important contribution to the process of change for the *Curriculum for Excellence*.

The University of Glasgow, commissioned to do the analysis on the draft experiences and outcomes, summarized the feedback for each subject area and provided insights to inform the next stages of development. Groups of curriculum and subject area specialists, drawn from all sectors of education and national organizations, examined the analysis of responses for each curriculum area and made recommendations for action to refine and supplement the draft experiences and outcomes. Further engagement was then used to test reactions to the proposed changes—those involved included a wide range of practitioners, partners and specialists.

The final quality assurance and approval stages involved all national partners and the Curriculum for Excellence Management Board. Following further quality assurance processes, the new curriculum guidelines were published in 2009 for implementation in 2010. Education Scotland continues to support the profession, local authorities, schools and teachers in developing, at a local level, *Curriculum for Excellence* during this period and beyond.

Finland

Vitikka, Krokfors and Hurmerinta (2012) describe the process of creating the national curriculum as being both democratic and hierarchical. Educators, parents and a wide range of stakeholders are consulted. The process of development includes school administrators, teacher unions and school staff to build both ownership and consensus on curriculum as policy. The development of structures for collaboration has been central to the development process. The authors also note this approach has resulted in more coherent curriculum than in the past, when curriculum was developed by subject matter experts with scant attention to shared approaches, educational aims and pedagogy. However, it is known that triggers for curriculum change, like in New Zealand, include time between development cycles, teacher satisfaction with programming outcomes, student performance on national and international tests, and research.

Further, in terms of management strategies and practices, one of the most significant principles of Finnish education since the 1970s is to “... facilitate networked-based school improvement collaboration between schools and non-governmental associations and groups” (Sahlberg, 2011, p. 126) and within this principle is the idea of *networked collaboration*. This idea moves beyond New Public Management and into networked governance, which is seen by Bourgon (2008) as “... the most powerful innovation in organizational development of the past 25 years” (p. 396) and capable of “... transforming the role of ... government” (p. 396). Networked collaboration is a way for governments to capitalize on social capital

created through community interactions for policy development on mutually agreed-upon goals. Networked collaboration requires a significant shift in government moving away from hierarchical, legal authority and market mechanisms to shared values and trust. In so doing, government can engender greater participation, satisfaction and outcomes for the community. For curriculum in Finland, this means the creation of government and community structures that are based on a collaborative relationship that is long term and involves highly interdependent linkages, shared common missions, risk and reward (Brown & Keast, 2003, pp. 2–3, 11).

Theme 3: The Role of Government and Level of Stakeholder Involvement and Engagement in Curriculum Development

Role of Government

Canadian Jurisdictions

In Canada, all provincial and territorial ministries have roles in curriculum development and the revision process. These roles can include leading, developing and distributing curriculum, developing assessment standards and providing lists of either prescribed or recommended resources. Some ministries also create their own resources.

All Canadian provincial and territorial ministries write at least a portion of their own programs of study. However, provinces and territories may be part of partnerships, such as the Western and Northern Canadian Protocol or the Council of Atlantic Ministers of Education and Training. Within these partnerships, ministries may adopt curriculum without changing it, adopt it with modifications (e.g., Newfoundland and Labrador adapted the Western and Northern Canadian Protocol mathematics) or choose not to use it. The Council of Atlantic Ministers of Education and Training has developed Essential Graduation Learnings that have been adopted by the four Atlantic provinces. These overarching learnings provide a framework for provincial curricula from which further learner outcome development occurs.

International Jurisdictions

Australia

In 2009, the Australian parliament established a statutory authority called the Australian Curriculum, Assessment and Reporting Authority. This independent authority has the following main functions: developing a national Kindergarten to Grade 12 curriculum that consists of content and achievement standards; developing and administering national assessments; and collecting, managing and analyzing student achievement and other data to report on school and system performance (Australian Curriculum, Assessment and Reporting Authority, n.d.b, para. 1). School education (including enrollment policies, curriculum content, course accreditation and certification procedures, and assessment practices) is considered the constitutional responsibility of the states.

School jurisdictions and authorities are responsible for supporting the implementation of the Australian Curriculum. With support from the Australian Curriculum, Assessment and Reporting Authority, states and territories have already begun planning for implementation and this work continued in 2011. The learning/subject areas of English, mathematics, science and history were implemented in 2011. The education ministers had agreed earlier that the nature and timing of implementation of curriculum was a matter that had to be considered by each state and territory, with schools being able to opt into earlier implementation. However, the ministers also agreed that significant implementation needed to be in place in all schools by the end of 2013 (Australian Government, Department of Education, Employment and Workplace Relations, 2010; Australian Curriculum, Assessment and Reporting Authority, 2010a). The Australian Curriculum, Assessment and Reporting Authority site contains the plans devised by each state and territory for implementation of the national curriculum.

With the upcoming national curriculum coming on board, the Australian government moved to centralize various services under an umbrella organization called Education Services Australia. Schools Catalogue Information Service represents the merger of Curriculum Corporation and Education.au Limited and is now a not-for-profit business unit within Education Services Australia. The Schools Catalogue Information Service represents an established partnership involving all Australian Education Ministers and the New Zealand Ministry of Education (Education Services Australia, 2012b). Its main purpose is to provide schools with an access to a resource cataloguing database that contains resource records that are written, following established standards. The aim of this service is to reduce the cost and duplication efforts of resource cataloguing in schools, while ensuring high quality and consistency in cataloguing of materials for schools. The Schools Catalogue Information Service database contains over one million educational materials; i.e., books, audiovisual materials, digital resources, websites.

Other resources are also provided through Education Services Australia. One of the entities that is managed by Education Services Australia is the National Digital Learning Resources Network for the Ministerial Council on Education, Early Childhood Development and Youth Affairs that uses research to inform the use of digital resources for learning and teaching (formerly known as The Learning Federation). This service aligns digital resources with the Australian curriculum, provides access to the national collection of digital resources (supported through jurisdictional digital resource sharing) maintains licensing and copyright for the national collection, in addition to maintaining the technical infrastructure. The National Digital Learning Resource Network is also responsible for hosting existing systems to permit national distribution of acquired digital resources.

The collection, infrastructure and standards were developed as a collaborative effort by all the Australian jurisdictions and are jointly owned. Currently there are over 12 000 digital resources available free of charge to all schools in Australia, accessed through state or territorial portals or through the *Scootle* portal. The available resources include interactive multimedia resources; audio, video and photo collections; open-ended tools that permit teachers and students to create learning resources; interactive assessment materials; samples of student work, teacher ideas, unit plans and curriculum resources. The infrastructure houses the digital resources and metadata repository (an exchange system that allows for teacher sharing), and links to web services provided by the states and territories

as well as the national web portals for teachers and preservice teachers (Education Services Australia, 2012c).

Another interesting feature that is available is the *Schools Online Thesaurus* (ScOT), which provides an ensemble of vocabulary terms used in Australian and New Zealand schools, including terminology related to school subjects and educational and administrative processes. The purpose is to aid teachers in identifying high quality learning and teaching resources to meet their needs and those of their students. The thesaurus also has the capacity to link non-preferred terms to those used in the curriculum to assist in alignment. The other feature of this system is that “ScOT terms enable [sic] clusters of related resources to be identified within vast pools of content ... [and] can be used as a tool to zoom in on items of interest” (Schools Online Thesaurus, 2012, para. 3).

In addition, Curriculum Press is a major provider of curriculum materials in Australia. Its compilation of curriculum resources is intended to support both experienced teachers and those new to the profession in developing enriching learning experiences for their students.

Belgium (Flanders)

Currently, Flanders has four different educational umbrella groups responsible for schooling. These include the Council for Community Education, Free Subsidized Education, the Educational Secretariat of Towns and Municipalities and Flanders Provincial Education. These umbrella organizations form an intermediate level in the policy formulation between the Department of Education and the schools themselves.

As a result of the ties with political parties, the different umbrella organizations have, over the years, built up their unique and autonomous governance. For example, the Council for Community Education has only a single school board, while the other organizations consist of a collection of school boards, each of which is independent from the next. Guidelines from the umbrella organizations and other community education bodies may or may not be observed by the local school boards.

Unusual for a European jurisdiction, Flanders does not have a central examination program, nor does it have a centrally developed curriculum. In relation to other surrounding countries, the Flanders educational system is very autonomous. To ensure the quality of the education, there is an inspectorate body for primary, secondary and adult education. The main tasks of the inspectorate are outlined in a decree (1991) requiring the inspectorate to focus on the school rather than on each individual teacher (De Coninck, 2008).

The Flemish parliament is responsible for approving this procedure and receiving various inputs from society, in general, to ensure the developed minimum attainment levels will have broad social support and will have the approval of the majority of interested parties.

England

The Department for Education, which can be traced back to the Department for Education and Skills, was a United Kingdom government department between 2001 and 2007. It was responsible for the education system and children’s services in England. In 2007, the department was split in two by

Gordon Brown's government into the Department for Children, Schools and Families and the Department for Innovation, Universities and Skills.

In May 2010, the Department for Education was formed. The department, responsible for both education and children's services, focuses on a number of priorities, such as the reform of the national curriculum, and gives greater autonomy to schools on how they plan and teach the curriculum.

As noted earlier, the Department for Education is currently leading the review of the national curriculum by relying upon an advisory committee of educators and review panel made up of teachers, academics, business and industry to provide recommendations to the government. Stakeholder engagement has been done through questionnaires and face-to-face seminars (Bron, Hooghoff & Timmerhuis, 2009, pp. 28–29), and e-consultations. Extrapolating from the current review process of the National Curriculum, it would appear, that while the Department for Education will be leading, it will be doing so in collaboration with educators and stakeholders by seeking advice, input and recommendations for future curriculum and other reform initiatives in England.

Finland

The Finnish government sets out the general goals and purposes of education, as well as the distribution of classroom hours for each subject area. The Ministry of Education outlines the legislation and the government's decisions with respect to education (Kupiainen, Hautamäki & Karjalainen, 2009). Education in Finland is organized and provided by local authorities (mainly municipalities) who play an important role as education providers.

"There are two ministers within the Ministry of Education—the Minister of Education and Science deals with issues relating to education and research, while the Minister of Culture and Sport focuses on responsibilities related to culture, sports, youth, copyright, student financial aid and church affairs" (Eurybase, 2009/2010, p. 10).

The Finnish National Board of Education is a national agency subordinate to the Ministry of Education. The board is tasked with a number of responsibilities related to education, including pre-primary and basic education; general upper secondary education; vocational education and training; formal adult education and training; liberal adult education; and basic education in the arts (Finnish National Board of Education, n.d.a).

The national core curriculum is developed by the Finnish National Board of Education. Reform processes are initiated at the national level, but schools and municipalities have the responsibility to develop their own curricula, select textbooks and instructional methods. Thus, the strategy is a blend of centralized and decentralized approaches (Frassinelli, 2006). Schools are authorized to access the national framework for developing curriculum that is more localized in nature. Within the local curriculum, decisions are made with respect to the educational and teaching tasks of basic education while addressing the purpose of the subject matter outlined in the national core curriculum (Finnish National Board of Education, 2004, p. 8).

The Finnish National Board of Education also coordinates information networks and services in the education sector, produces indicator data and information for anticipating educational needs, maintains the financing system for the education sector, and publishes training guides (Finnish National Board of Education, n.d.b). Vitikka, Krokfors and Hurmerinta (2012) note that previously the Finnish National Board of Education approved all textbooks, but now publishers can develop resources that have a strong influence on teaching and learning in Finnish schools. The learning materials used in Finnish schools are mainly produced by commercial publishers. The Board also produces materials with a relatively small circulation for unique groups. Schools and teachers are able to decide on the materials and textbooks and/or resources to be used in the classroom. This also applies to the use of information and communication technology.

Kupiainen, Hautamäki and Karjalainen (2009, p. 21) note that the Finnish National Board of Education conducts national assessments of curricular outcomes in general and in vocational education. “These comprise alternate yearly assessments of mathematics and mother tongue at the end of basic education (Grade 9), occasional assessments in other subjects and at other grade levels and, lately, longitudinal assessments in key subjects” (p. 21). The national guidelines and principles for student assessment are detailed in the core curriculum.

Assessment is the responsibility of individual schools in Finland. However, there is a national standardized examination called the National Matriculation Examination (Frassinelli, 2006). This examination, much like the Scholastic Aptitude Test, enables students to continue to post-secondary studies and takes place at the end of upper secondary school and is regulated by Section 18 (766/2004) of the *Upper Secondary School Act*, the *Act on the Organisation of the Matriculation Examination* (672/2005) and the *Government Decree on the Matriculation Examination* (915/2005). “The Matriculation Examination Board is responsible for administering the examination, its arrangements and execution” (The Finnish Matriculation Examination Board, n.d., para. 4).

In terms of technology, Finland has experienced three stages of policy innovation in digital learning resources resulting in varying and overlapping methods of incorporating digital resources in schools. There has been a gradual shift of focus away from: 1) providing digital infrastructure and teacher professional development opportunities with new technologies; and 2) creating curricular materials and digital tools for teachers. There is now a more direct focus on using digital resources in conjunction with whole school reform and learning environments, with the goal of altering classroom pedagogy (Organisation for Economic Co-operation and Development, 2008).

The majority of new approaches have benefited from communication exchange with other Nordic countries throughout the 1990s. As such, a variety of innovative techniques have resulted in classroom and school infrastructure standards, a wide selection of quality digital resources from various government and non-government areas, various university-based research and development activities, online teacher in-service programs, and novel uses of video game resources and equipment.

In addition, Finnish teachers have access to the Peda.net tool, which is a subscription-based service that originated from a small research and development project at the Finnish Institute for Educational Research, University of Jyväskylä. This project provides municipalities and schools in Finland with the

technological capabilities (via a portal) for teachers to develop, accumulate, modify and distribute information. It is also a tool for writing, maintaining and publishing the school curriculum. The fees associated with Peda.net are dependent on the population and number of schools within a municipality or the number of students enrolled in a school. Future plans to further develop the Peda.net involve the incorporation of additional tools that will offer pedagogical support, including features related to new uses of digital learning resources and curriculum-based models and practices (Organisation for Economic Co-operation and Development, 2008).

Germany

Germany is a federal republic with 16 states (*Bundeslaender*), and, constitutionally, each state has sovereignty over education. The federal parliament and government can influence education through financial support, but each state has its own school system. The Standing Conference of the Ministers of Education and Cultural Affairs of the federal states (*Kultusministerkonferenz*) meets regularly to discuss education.

The Programme for International Student Assessment results released in 2001 and the global political and economic changes, including the reunification of Germany, resulted in the need for education policy. Specifically, the German Ministry of Education called for policy aimed at higher performance, increased enrolment in higher education, and a focus on individual students' strengths and abilities. In addition to national standards, other reforms such as reduction of school years from 13 to 12 for Gymnasium schools and the creation of a research institute (*Qualitätsentwicklung im Bildungswesen* within Humboldt University) in 2004 to establish national performance standards and tasks for implementation (Leyendecker & Letschert, 2008). Drafts were developed and posted for feedback with the final stage involving the curriculum being tested in schools. Curriculum or the *Rahmenlehrpläne* then defines educational standards for each subject, while schools and teachers are required to design instruction (Leyendecker & Letschert, 2008, p. 41).

To facilitate implementation of curriculum, the two state institutes for school development (National Institute for School and Media in Berlin and Brandenburg) were combined into a single institution. This institute is now responsible for the development of curriculum, standards-based examinations for secondary schools, curriculum pilot projects, professional development, and multimedia and web-based resources (Leyendecker & Letschert, 2008).

Korea

The various organizations tasked with the administration of education consist of the following three levels of authority: the Ministry of Education at the national level, offices of education at the municipal and provincial level, and district offices of education at the county level. In order for educational autonomy to occur at the local level, each municipal or provincial office of education has a board of education. This board has administrative powers related to important decision-making matters pertaining to education. Each school also has a school council, which ensures the autonomy of the school's management and assists in increasing community involvement (INCA, 2011a).

Korea's Ministry of Education, Science and Technology is responsible for all areas related to school education, vocational education and lifelong learning, education policy planning and human resources policy, educational welfare, science and technology policy, educational research policy, and international cooperation (INCA, 2011b). "Article 23 of the *Elementary and Secondary Education Law* states that schools should administer the curriculum; that the Minister of Education has the power to determine the standards and content of the curriculum; and that school superintendents may establish further standards and content to reflect their district's particular situation (within the limits of the curriculum set by the Minister)" (INCA, 2011b, para. 2).

Korea's Ministry of Education, Science and Technology sets the curriculum for each level of schooling from Kindergarten to high school. However, recent curriculum reforms in Korea have placed more importance on the decentralization of curriculum control. For instance, the Sixth National Curriculum permitted local education authorities to select and teach appropriate subject areas and to determine the unit number of courses required at the high school level. Individual schools were also encouraged to amend the national curriculum or develop new subjects while considering the needs and circumstances of the school and local communities, and the interests of students, teachers and community members (INCA, 2011b).

The Korea Institute for Curriculum and Evaluation, established in 1998, is an educational research institute that receives funding from the Korean government. It provides advanced research on curriculum development for elementary and secondary schools and educational evaluation. The research work of the Korea Institute for Curriculum and Evaluation has also included "... improvement of teaching and learning methods, development and authorization of textbooks and the implementation of national-level educational tests" (Korea Institute for Curriculum and Evaluation, n.d., para. 2).

Close collaborative ties have been formed between the Korea Institute for Curriculum and Evaluation and government, academic circles, and teachers and students through public meetings and seminars. The institute is also involved in policy development and actively participates in collaborative international research projects. Over 600 research projects having been completed since its inception. The institute actively engages teachers, students and education specialists in its research pursuits. Research into elementary and secondary school curricula has been one of the main functions carried out by the institute. Its objective is to contribute to the development and formation of Korea's national curriculum as well to carry out research into curriculum by analyzing comparative international studies (Korea Institute for Curriculum and Evaluation, n.d.).

Korea's Ministry of Education, Science and Technology also sets the criteria for developing textbooks and instructional materials. There are three types of textbooks—those:

- whose copyrights are held by the Ministry of Education (nearly all elementary school textbooks are government copyrighted, as well as those for Korean, Korean history and moral education at the middle and high school levels)
- produced by commercial or private publishers which are authorized by the Minister of Education (this applies to most textbooks used in middle schools and high schools)

- which are approved by the Ministry of Education, on the request of school principals or superintendents of municipal and provincial boards of education (this is the rarest type of authorized textbook in Korea (INCA, 2011a 2011b).

In addition to textbooks, Korea's Ministry of Education, Science and Technology expects municipal or provincial education authorities to create and distribute various types of teaching and learning materials. Schools are encouraged to also make use of a number of multimedia resources; e.g., radio or television programs, audiovisual materials and computers. Furthermore, teacher handbooks, audiotapes and videotapes, computer software, etc. are also made available to schools (INCA, 2011a).

For Kindergarten, a collection of government-copyrighted instructional materials has been developed. The government also regularly develops four or five types of instructional materials, such as teachers' instructional guides, students' play tools and parents' educational materials, which it distributes free of charge to Kindergartens nationwide (INCA, 2011a).

In relation to other types of curriculum materials, the Educational Broadcasting System has been in operation since 1990 to provide support and expand opportunities for education. It operates one public television channel, two satellite television channels and one radio channel. While the Educational Broadcasting System is involved in the planning, organization, production and delivery of education broadcasting, the Korean Broadcasting System is responsible for its transmission. Approximately 40% of the budget is subsidized by Korea's Ministry of Education, Science and Technology which provides its feedback on the basic format of all programs (INCA, 2011a).

Educational broadcasting programs are accessible via television for most hours in the day from Monday to Friday (over 13 hours) and for 24 hours over the weekend, while radio programs are broadcast 20 hours each day (INCA, 2011a). Access to technology has been made available through the Digital Library Support System, which is "a system that supports school libraries which are built within Metropolitan and Provincial Offices of Education, and is an Internet-based, one-stop service system that helps the school library carry out the function of a teaching learning support centre, digital library, and a reading and culture centre" (Korea Education and Research Information Service, 2004, p. 10).

Another prominent initiative is the Cyber Home Learning System, which is targeted primarily for elementary and secondary students in grades 4–10. The primary goals and outcomes for this initiative include more educational opportunities for students who are economically and geographically challenged, reduced costs related to private tutoring for lower income families, and higher achievement rates for students with lower academic achievement.

New Zealand

The Government of New Zealand determines the overall structure and layout of education. The Ministry of Education is responsible for providing guidance to the government and assists in the implementation of education policy. The Ministry of Education offers policy advice to the Minister of Education on all education matters extending from early childhood to post-secondary education (UNESCO, 2006). "It is also responsible for developing specifications for the curriculum (curriculum statements), allocating resources and monitoring effectiveness. Local government has no educational role" (INCA, 2012).

Schools in New Zealand are self-governing and individual schools establish their own rules, school policies and teaching programs.

The Ministry of Education controls curriculum development for schools. The New Zealand curriculum is the official policy document that outlines teaching, learning and assessment in New Zealand's English state schools (including integrated schools). The main objective of the New Zealand curriculum is to set the overall direction for student learning and offer assistance to schools as they plan and evaluate their curriculum. The curriculum itself is designed to encompass "all students ... irrespective of their gender, sexuality, ethnicity, belief, ability or disability, social or cultural background, or geographical location" (New Zealand Ministry of Education, 2007, p. 6). A similar document was also created for the Māori-language schools.

The New Zealand Ministry of Education sets the standards for learning through the development of national guidelines that include curriculum statements and achievement standards. The ministry also supports teachers and principals through professional leadership opportunities, professional development programs, scholarships and awards. In addition, they support teaching and learning through resources and assessments (New Zealand Ministry of Education, 2012a).

The current national curriculum guideline provides a succinct description of each learning area (subject) and how learning is to be structured. This document, created by the government, was validated by more than 15 000 stakeholders (students, teachers, principals and teams of academics) prior to its implementation in 2007 to ensure that the outcomes outlined were current, relevant and well-defined (New Zealand Ministry of Education, 2012b). The national curriculum serves to outline broad outcomes and schools are required to develop their own curricula based upon these guidelines.

The New Zealand Qualifications Authority, appointed by the New Zealand Ministry of Education, ensures the credibility and robustness of New Zealand students' qualifications nationally and internationally. As schools have the mandate to develop curriculum at the local level, they also determine the methods by which they will gather, analyze and make use of assessment information. The Ministry creates a number of resources to assist with school-based assessment practices. The Assessment Resource Banks include an online compilation of assessment materials in English, mathematics and science. The *Assessment Tools for Teaching and Learning* is another resource tool (available in both English and Māori) that is used to assess students' literacy and numeracy skills. In using this tool, teachers may choose their test content and difficulty, which are aligned with their teaching programs; *Assessment Tools for Teaching and Learning* also analyzes and graphs student performance. Teachers then access a list of online classroom resources which they can use to plan future learning (New Zealand Ministry of Education, 2005; INCA, 2012).

Learning Media is a state-owned company that collaborates closely with the Ministry of Education. The company produces many of the resources that the Ministry of Education then provides, typically free of charge, to educators and students. “The New Zealand approach is not a textbook-based curriculum. Consequently, books are not approved by the State. However, some curriculum-related resources are developed with government funding and are published by Learning Media on a contract basis, or by the New Zealand Council for Educational Research” (INCA, 2008a).

Learning Media is also an exporter of literacy materials and programs to a number of international countries, including the United States, Canada, the United Kingdom, Australia and nations of the Pacific. The company is considered the largest publisher of te reo Māori resources and their materials are published in five Pasifika languages. Learning Media also manages the Ministry of Health’s education resources and creates educational resources that are aligned with the curriculum through a variety of media outlets for various public and private organizations in New Zealand (Learning Media, 2009).

A professional development team at Learning Media creates and oversees literacy and assessment training programs for schools and teachers in New Zealand. The company has been providing professional development services to the Ministry of Education over the past six years. It also collaborates with the Ministry of Education in developing teaching and learning guides for senior secondary school subject areas. These documents serve as additional components to the New Zealand curriculum and offer guidance on planning, teaching and assessment (Learning Media, 2009).

New Zealand’s National Education Monitoring Project was designed to examine the educational achievements and attitudes of students enrolled in primary and intermediate schooling from 1995–2010, and was funded by the Ministry of Education. It was organized by the Educational Assessment Research Unit at the University of Otago. The cost of the contract was roughly \$2.7 million per year and nearly half of the funding was used to pay for the time and expenses of the teachers who provide assistance with the assessments as task developers, teacher administrators or markers. The main objectives of the National Education Monitoring Project was to provide a broad understanding of students’ knowledge and abilities across all major learning areas in the school curriculum so that trends in educational performance could be identified, as well as to provide information to aid policy makers, curriculum specialists and educators with their planning. The National Education Monitoring Project also informed the public about national trends in students’ educational achievement (National Education Monitoring Project, 2009).

Scotland

Since 2002, curriculum has been revised for students from ages 3 to 18. This initiative, launched by the Scottish government, was to make curriculum address the needs of future citizens and the knowledge economy and to increase the coherence, efficiency and effectiveness of the curriculum. This initiative was not launched because of any perceived weakness in the curriculum; rather, it was the first major action of the newly installed Scottish parliament that was established as a devolved government within the United Kingdom. Prior to the revision of curriculum, the Scottish government initiated the National Debate in 2002 that focused on ways to create shared values for Scottish education and to identify strengths of the existing curriculum and desired changes. The debate included all education authorities

and independent schools in Scotland. The Minister of Education endorsed the conclusions of the debate and followed up with a ministerial response in 2003. Following the ministerial response, a Curriculum Review Group, comprised of educators, parents, administrators and a school board chair, was struck to develop the objectives of the *Curriculum for Excellence*. Specifically for curriculum, these findings included:

- increasing choice of curriculum to meet students' needs and aspirations and realize their individual talents
- reducing the duplication and inconsistencies in the curriculum
- improving the continuity between the different stages of curriculum from ages 3 to 18
- reducing the number and complexity of assessments and making sure these assessments and examinations are used to support learning
- improving numeracy and literacy
- preparing youth for work by providing skills for tomorrow's job market
- creating a better balance between general and vocational skills.

Features of the existing curriculum that were retained included the:

- flexibility of the Scottish education system
- balance between breadth and depth of the curriculum by providing more space in the curriculum for in-depth study and the attainment of broader outcomes from school education
- quality of teaching materials.

In February 2011, Education Scotland was established to lead and support the implementation of *Curriculum for Excellence* and to evaluate the quality of education by providers, such as local authorities. Education Scotland was also charged with promoting professional learning and stimulating innovation. The Minister will continue to set policy and strategy for the education system at the national (Scottish) level (Education Scotland, 2011).

As part of their curriculum change process, the Ministry of Education has moved to a closed access interface that is situated within the GLOW portal, allowing teachers to plan and monitor learning through a web page called *My experiences and outcomes*. GLOW provides for a trusted and safe environment for students, parents and teachers to create personalized programs and to share learning and teaching resources. GLOW also provides for a variety of online tools to enhance learning and to facilitate collaboration across the network (Education Scotland, n.d.).

In GLOW, users can browse through experiences and outcomes within and across subject areas. They can save outcomes as they browse and then organize them into themes or organizational groups. They can then be stored online or saved as a downloadable file for future use. The GLOW network includes teaching and course materials, schedules and feedback interfaces, and connects over 800 000 teachers and students (Hooghoff & Bron, 2008, p. 39).

Stakeholder Involvement and Engagement

Nationally and internationally, the definition of education stakeholders includes those working in the education field; i.e., teachers, principals, central office staff, university researchers, professors of education. The importance and the assumed value of engaging with the client/customer and consumer of education is recognized in some jurisdictions. The engagement of teaching communities, professional associations, academics, industry and parent and community groups is considered essential for developing and implementing curriculum at the national or provincial/territorial or state level. Technology is providing for a variety of ways in which stakeholder input and feedback is being used to develop and vet curriculum. Technologies, such as videoconferencing, podcasts, chats, online forums, e-mail, surveys and online newsletters, are used to facilitate engagement. Interactive websites are also being used to allow for varying degrees of engagement for different stakeholder groups and to allow for the self-identification of stakeholders who may not be immediately evident.

The following section describes some of the practices that are being used to extend and enhance stakeholder involvement and engagement. The descriptions provide a glimpse into what has occurred in recent curricular change in various jurisdictions around the world. It is important to note, however, that the engagement processes described below may not necessarily represent standard practice.

Canadian Jurisdictions

British Columbia, in its *redesign*, will engage with a number of stakeholders internally and externally. In the past, to solicit feedback, the department has used online survey forms, which can be filled out and submitted electronically for new or revised curriculum.

In Ontario's review process the following stakeholders are involved: Minister's Advisory Council on Special Education, Faculties of Education, parents, students, universities, colleges and other ministries (Ontario Ministry of Education, 2010).

International Jurisdictions

Australia

Australia's state governments agreed to establish the Australian Curriculum Assessment and Reporting Authority to oversee the development of the country's national curriculum. This authority is developing the Australian curriculum in consultation with a network of stakeholders, which includes teachers, principals, government, state and territory education authorities, professional education associations, business and industry, community groups and the general public. This authority has also been advising education ministers on the approach to developing the learning areas for health and physical education, economics, business, information and communication technology, design and technology, and civics and citizenship (Australian Government, Department of Education, Employment and Workplace Relations, 2010).

As Australia continues to go through its development of a national curriculum, stakeholders are invited to register on the Australian Curriculum, Assessment and Reporting Authority website to read the draft outcomes, and review and provide feedback by means of an online questionnaire and also through the submission of comments by e-mail. This is a closed access website which requires the user to create a login name in order to participate. The feedback is then used to make revisions to the draft. Once the curriculum document has been vetted and feedback has been obtained, it is posted on an open access website which is available to the public. Users can search by subject area and are offered multiple filters for accessing the subject area content and learner outcomes that they seek. The available options by which to filter the information are strands, general capabilities and cross-curriculum priorities. “View options” provides flexibility for the user as the content can be viewed by learning area, one year at a time, by year across learning area, by multiple years for the same learning area and by content level descriptions.

Belgium (Flanders)

As noted earlier, in the development of attainment levels, there is considerable engagement of Belgian (Flanders) society as a whole via social debate led by the Department of Educational Development. This procedure is designed to receive various inputs from society, in general, in order to ensure the developed minimum attainment levels will have broad social support and will have the approval of the majority of interested parties. While the attainment levels are developed by educator working groups, the Flemish Advisory Council for Education provides advice to the minister of education. Within the Council, all participants, such as schools, trade unions, parents and students, are also consulted.

Once the attainment levels have been developed, the Flemish government presents the proposal and advice from the Flemish Advisory Council for Education to the Flemish parliament for approval.

England

As noted earlier, when describing the current situation relating to the review of the national curriculum in England, the Department for Education, while leading the review, was relying upon an advisory committee of educators and a review panel made up of teachers, academics and business and industry to provide recommendations for the national curriculum in England.

To address the scope and challenge of the review, the government has been engaging primarily stakeholders from education in this review. For example, the expert panel reviewing subjects that are currently part of the national curriculum is comprised of educators and chaired by an official from the Department for Education. For the national curriculum, stakeholder engagements have included questionnaires, face-to-face seminars (Bron, Hooghoff & Timmerhuis, 2009, pp. 28–29) and e-consultations. As part of the review, the Department for Education has used a number of channels to raise awareness of the review. These include the department’s website, social media, partner and stakeholder organizations, and publications. Events have also been organized to engage subject matter stakeholders. The review team and department officials participated in a number of events, such as workshops, meetings and conferences.

The implications and recommendations of the expert panel will be debated further by teachers, governors (school trustees), academics, business and parents. At present, the process of development of the draft programs of study for the revised national curriculum calls for a review and consideration by the Secretary of State for Education, the Minister of State for Schools, the Minister of State for Further Education, Skills and Lifelong Learning, and other members of the Ministerial team in the Department for Education. This review and consideration would then be followed by a public consultation with a range of stakeholders about developing programs of study. To enable this engagement and consultation, the Department for Education intends to “organize a series of consultations events for key stakeholders and work to ensure head teachers, classroom teachers, parents and others are able to contribute to the work of developing the new national curriculum” (England Department of Education, 2011b, p 7).

Finland

An extensive consultation process takes place before the core curricula is approved in Finland. The Finnish National Board of Education collaborates with a number of key partners, including expert and interest groups, providers of education, teachers, etc., when preparing the curricular framework and determining the details of education programs.

For instance, the most recently reformed core curriculum for pre-school education was prepared in extensive co-operation with the Ministry of Education, the Ministry of Social Affairs and Health, the National Research and Development Centre for Welfare and Health, the Association of Finnish Local and Regional Authorities, the Trade Union of Education, the Finnish Book Publishers Association, as well as with the local authorities and their day-care centres and schools (UNESCO, 2007, p. 11).

Vitikka, Krokfors and Hurmerinta (2012) characterize the Finnish development process for the common core curriculum as a blended model between hierarchical–centralized and democratic–decentralized approaches to curriculum development. Reform processes are initiated at the national level, but schools and municipalities, in consultation with educators, parents, stakeholders, teacher unions and unions, have the responsibility to develop their own curricula, select textbooks and instructional methods. This blended strategy aims to increase ownership of the curriculum (Frassinelli, 2006).

New Zealand

Representatives from a number of groups were involved in the development process which included “trials in schools, collaborative working parties, online discussions, and an inquiry into relevant national and international research” (New Zealand Ministry of Education, 2007, p. 4). This re-development process led to the release of *The New Zealand Curriculum: Draft for Consultation 2006*. The Ministry of Education gathered over 10 000 responses from the public following its draft publication. These submissions were then examined and taken into account when the final document was written (New Zealand Ministry of Education, 2007). “The national curriculum statements ... are developed ... after widespread consultation with teachers, other educators, boards of trustees, and the wider community, including the business community. In this way all (national curriculum) statements build on the best of New Zealand experience and research” (INCA, 2008b).

Scotland

From the outset, teachers were to be engaged fully in shaping the *Curriculum of Excellence*. Engagement enabled anyone with an interest in education to be part of the feedback and revision process. The draft experiences and outcomes were published online and were accompanied by an online questionnaire for individuals, groups, schools and organizations to use to provide feedback on their thoughts and views.

More than 600 early learning years centres and schools took part in formal trialing to test specific experiences and outcomes in practice across all curriculum areas. Schools and centres chose experiences and outcomes to trial and submitted reports containing feedback that was used to inform the revision process.

Thirty-seven focus groups were held, covering each curriculum area and involving practitioners, senior education managers, representatives from professional bodies, industry, parents and learners, to discuss the draft experiences and outcomes. In addition, 133 submissions were received from a range of sources including learned societies and specialist groups. The University of Glasgow collated, analyzed and reported on the feedback for all curriculum areas in April 2009 for implementation in 2010. A report of the findings is posted on the website with next steps indicated (Education Scotland, 2012).

Education Scotland has developed materials to involve school staff and learners in the Building Your Curriculum process. Schools, centres and their partners are expected to work together within and across school communities to share thoughts, views and ideas as they develop *Curriculum for Excellence*. Building your Curriculum is a process developed by Learning and Teaching Scotland to help schools and centres review their curriculum structures. School curriculum is a collaborative process which can be used to involve and engage the school community comprised of staff, parents, students and partners. They identify and build on their existing strengths and identify their priorities for change. Finally, they will create a curriculum plan to map out their proposed journey to show what the school will look like in a few years' time.

CONSIDERATIONS FOR CURRICULUM

From this chapter, it can be seen that the curriculum development process is as vast and varied as are the students for whom curriculum is intended. However, valuable learnings can be derived from the theory and experiences described in this chapter.

In 1998, Alberta Education produced the document *Deciding What Students Should Learn, How School Programs are Developed in Alberta* to detail what constituted programs of study and resources, and to describe the processes used for their development (see Appendix C). A more detailed draft framework of the curriculum development cycle processes and products was developed in 2006 (see Appendix D). The 2006 draft framework served as the baseline for curriculum development processes in Alberta Education. The stages outlined in the 2006 draft framework are to review, initiate, plan, develop, authorize, implement and maintain. Figure 2, which is an adaptation of the Curriculum Development process from 2006, shows these stages and identifies key aspects of each stage.

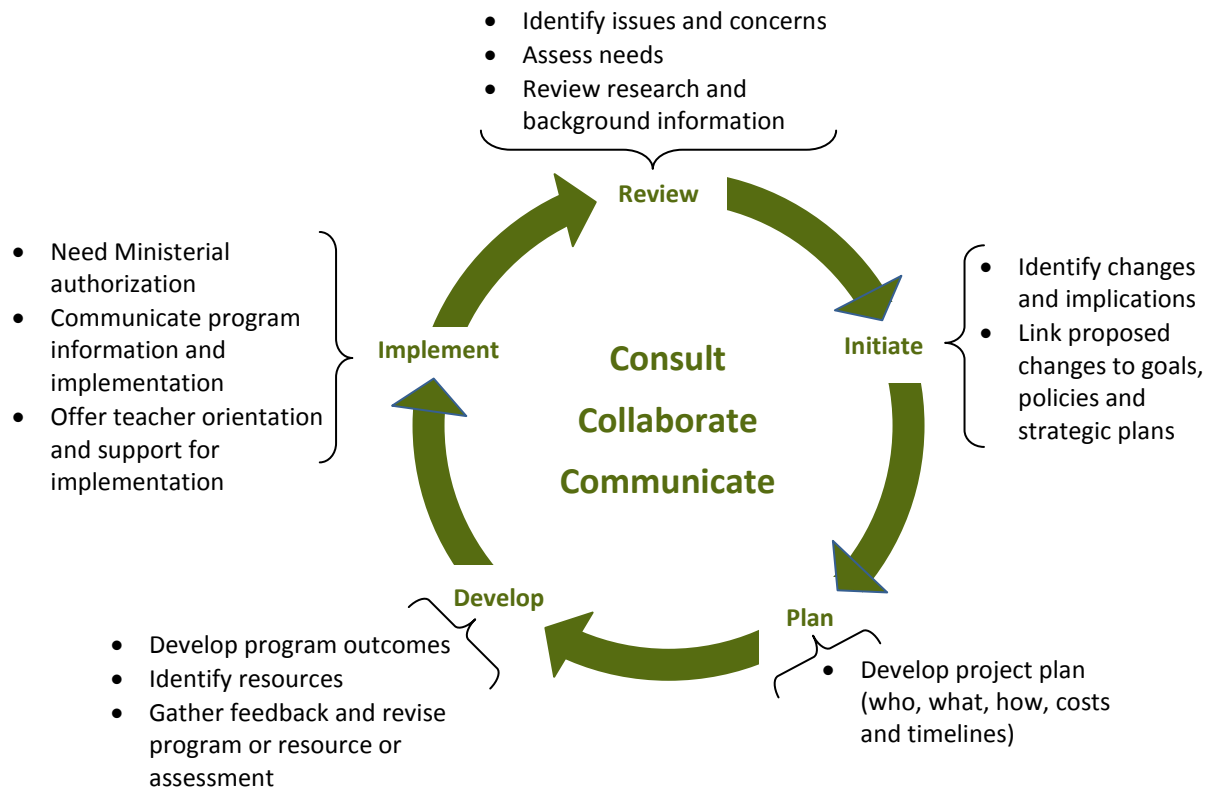


Figure 2: Adapted from Alberta Curriculum Development Process, September 2006 (Appendix D, p. 329)

This cycle has served well in the development of programs of study, but it has not been effective or efficient in meeting the rapidly changing needs of Alberta society, in developing curriculum (programs of study, assessment, and learning and teaching resources) in a simultaneous fashion nor indeed, in “evergreening” curriculum in a timely manner. As such, the following considerations can provide insight into possible future directions for curriculum development.

Theme 1: Consistency and Commonality in Programs of Study

Consistency throughout programs of study allows for all programs to be presented in the same manner to ensure coherence and cohesion in student learning regardless of the learning environment (e.g., face-to-face, e-learning, distributed learning). Different jurisdictions have achieved this in various ways, from developing broad curricula that is localized at the regional or school level to centralized curricula that is very prescriptive in nature. Different processes have been used to achieve this goal, such as government-appointed advisory committees that develop the curriculum, internal writing committees that include broad stakeholder engagements and that allow for contributions and feedback to be provided in a variety of ways; e.g., face-to-face engagements, e-mails, online surveys.

Looking for consistency and coherence is a cornerstone to successful implementation. One possibility for achieving this in the future is through the use of online access that allows for the tagging of programs of study data (learner outcomes) so that individuals can “build” a unique, customized, collection of programs of study or learner outcomes based on the individual needs of their students, as

has been done in Scotland. Programs of study can be organized by discipline or by level, or by any other categorization deemed educationally relevant. Commonality in the design of programs of study facilitates teacher understanding of the “big picture” goals of education. A common preamble can lay a foundation for the essential aspects of learning, such as competencies across all subject areas and subject-specific disciplines.

At its core, curriculum is concerned with the aims and content of learning which have been typically found in programs of study. A broader view of curriculum can be thought of as having a number of components, such as programs of study, assessment, and learning and teaching resources. Table 4, below, illustrates these components with their corresponding purpose. When these components are considered as a whole, as is the view of jurisdictions such as Australia and New Zealand, a more holistic and aligned learning experience is made available to students.

Table 4: Curriculum Components and Purpose (Adapted from Thijs & van den Akker, 2009, p. 12)

Component	Purpose
Programs of Study Rationale Goals and Objectives Content (e.g., affective, cognitive and procedural skills knowledge—factual and conceptual)	Describes: <ul style="list-style-type: none"> the why of what students are learning which aims and goals students are learning the what that students are learning.
Assessment	Describes how student learning is being assessed whether <i>for, as or of</i> learning, including: <ul style="list-style-type: none"> attainment levels and descriptors of indicators for each of the levels assessment programs at provincial and jurisdiction levels.
Learning and Teaching Resources	Describes what students are learning with , also includes supports for pedagogy, including: <ul style="list-style-type: none"> assessments <i>for, as or of</i> student learning at a classroom or grouping (i.e., non-graded) level learning activities based on learning experiences.

To achieve this coherency and consistency, process development plays a key role. Van den Akker and Kuiper (2007, as cited in Thijs & van den Akker, 2009, p. 15) describe a five-phased cyclical approach that occurs interactively and iteratively as seen in Figure 3 below. This approach is most often used when generic curriculum development occurs (p. 5). The process usually begins with the analysis phase and moves to the design phase, then to the development phase and then through to implementation;

however, central to this process is the evaluation phase that occurs at multiple points, as is demonstrated by the arrows. It is this iterative process that permits curriculum to become a quality product.

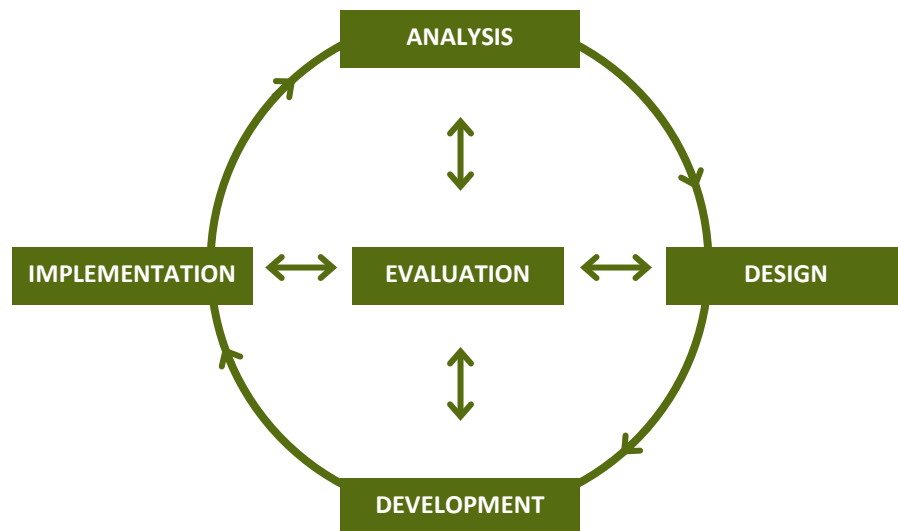


Figure 3: Core Activities in Curriculum Development⁶

The process for future curriculum development will likely retain these five general stages; however, the details will need to change to meet the needs of Alberta students and the rapidly changing society in which they find themselves.

Theme 2: Strategies and Practices for Developing and Updating Curriculum

There is limited documentation regarding the strategies used to develop curriculum or the “best or promising” practices employed by different jurisdictions. The identification of a rationale for change (triggers) and the nature of triggers seem to be fairly consistent across jurisdictions and this commonality in the triggers is not surprising. Triggers seem to play a significant role in launching major curriculum reviews or reforms and they will continue to impact the decisions made by governments related to education, but without necessarily being anticipated by societal and economic considerations. Acting upon triggers and emerging or perceived needs, then, are challenges for all governments.

⁶ ©Netherlands Institute for Curriculum Development (SLO). *Curriculum in development*. 2009. Enschede, the Netherlands. <http://www.slo.nl/downloads/2009/curriculum-in-development.pdf/> (July 2012)

Curriculum design is a complex task as are the processes required to develop curriculum. In today's rapidly changing world, the curriculum designed and implemented today may not be relevant five years in the future (Sahlberg, 2006, p. 8). According to Bron, Hooghoff & Timmerhus (2009, pp. 38–39), the following points should be considered for curriculum development:

- testable learning results should not be the only measures for schools
- broad consultation of stakeholders is desirable
- curriculum content should consider the whole child and link life inside the school with life outside of school
- new curriculum will affect teacher training and professional development; support for implementation requires consideration
- a new curriculum does not mean that the curriculum review is completed; it must be an ongoing endeavour
- there must be a balance between measurable goals and socially-oriented (e.g., citizenship, ethics, environmental responsibility and awareness) goals
- latitude in levels (national, local, school) of curriculum to meet the needs of all students is important.

Sahlberg (2006, p. 9) would add the following points for consideration regarding curriculum development:

- it should be based on a consensus-based strategy and a defined curriculum purpose and policy
- expertise on curriculum development processes is required and this expertise needs to be continuously developed.

In essence, curriculum development projects are designed to solve complex problems of bridging education policy aims to outputs, such as programs of study, assessment, and learning and teaching resources. To achieve high quality outputs, curriculum developers need to combine iterative design and development processes. This iterative approach can be termed as the “prototyping approach” (Plomp & Nieveen, 2007, pp. 90–91). This entails the development of a preliminary version of what is being envisioned, and then testing and refining it before committing to full development and implementation of the final product. Prototyping can be especially useful for curriculum projects that are both complex and innovative, as each prototyping cycle contributes to curriculum design and outputs. A curriculum development model based on prototyping to enable ongoing and synchronous development of curriculum could be as follows.



Figure 4: Possible Synchronous and Ongoing Curriculum Development Processes,⁷ February 2012*

Figure 4 illustrates the recursive and iterative process that occurs within a phase and across phases in addition to considering the key role prototyping plays in the development of new or revised curriculum. This process could lead to better quality products in a shorter time frame as more upfront time is spent on the prototype and testing it.

⁷ Adapted from *Generic Design Research Model* (Wademan, 2005) and *Refinement of Problems, Solutions, Methods and Design Principles* (Reeves, 2000, 2006).

* The above process assumes an enterprise solution.

Theme 3: The Role of Government and Level of Stakeholder Involvement and Engagement in Curriculum Development

Role of Government

Internationally, governments generally are responsible for the development of programs of study and assessments but are less involved in the development of resources.

Some international jurisdictions, such as Finland, Germany and most recently Australia, have established arm's length bodies for the development of programs of study. For example, Australia's state governments agreed to establish the Australian Curriculum Assessment and Reporting Authority to oversee the development of the country's national curriculum. In Finland, the development of the national core curriculum is developed by the National Board of Education established by the Finnish Ministry of Education and Culture while the goals and aims of education are determined by the Cabinet (Council of State). In Germany, many states choose to collaborate; e.g., the Ministry of Education for the state of Berlin, which is responsible for the curriculum, has tasked the National Institute for School and Media to develop the curriculum for primary education, in collaboration with the states of Brandenburg, Bremen and Mecklenburg-Vorpommern.

Canadian jurisdictions, New Zealand, Scotland, Singapore and Korea have departments of education that set the curriculum standards for learning through the development of national guidelines that include curriculum statements and achievement standards. Germany has a long history of collaboration whereas, in Australia, the establishment of the Australian Curriculum, Assessment and Reporting Authority suggests the movement toward a more "hands-off" means of curriculum development.

In this vein, one of the principles of Finnish education since the 1970s is to "... facilitate networked-based school improvement collaboration between schools and non-governmental associations and groups" (Sahlberg, 2011. p. 126) and within this principle is the idea of *networked collaboration* that may provide the most insight into curriculum development. This idea moves beyond New Public Management⁸ and into networked governance, which is seen by Bourgon as "... the most powerful innovation in organizational development of the past 25 years" (Bourgon, 2008, p. 396) and capable of "... transforming the role of ... government" (Bourgon, 2008, p. 396).

Historically, the provision of public services was provided by government departments that were disaggregated, hierarchical and driven by rules and procedures. As demands for greater effectiveness and efficiency in the provision of services have grown, reforms under New Public Management emphasize the application of business-like principles and practices. These included business plans, and performance measures with greater emphasis on outputs as opposed to inputs. However, these reforms have been largely focused internally, driven from the top down and introduced through market-based solutions to optimize service delivery and utility.

⁸ New Public Management refers to the movement of government from the public servant who provided services to the public outside of the political process to government servants who "need to be more responsive to both the preferences of beneficiaries, citizens who pay for service provision through tax, and politicians who represent the collective will and make policy choices." Retrieved from http://epress.anu.edu.au/public_sector/mobile_devices/ch08s02.html

The socioeconomic environment is changing rapidly and citizens are seeking new ways to be connected through more inclusive institutions. Governments too are also looking at ways to capitalize on the social capital created through interactions in and within the community for policy development on mutually agreed-upon goals. In this way, government is moving away from hierarchical, legal authority, and market mechanisms to shared values and trust. In so doing, they engender greater participation, satisfaction and outcomes for the community. For curriculum, this means new ways of combining government and community interests within structures that are based on a collaborative relationship that is long term with highly interdependent linkages, shared common missions, risk and reward (Brown & Keast, 2003, pp. 2–3, 11).

One possible mechanism is through more focused engagement and collaboration with teachers. Internationally, many jurisdictions are involved in research into best practices for teaching to inform curriculum development. During curriculum development, a well-thought-out strategy should be employed (Hooghoff & Bron, 2008, p. 44). This can allow for broad and meaningful stakeholder engagement in the development of curriculum, while ensuring that government objectives remain in focus. As is the case with Finland, the most desirable approach might be a hybrid between a top-down and a bottom-up approach, one that meets the broad educational goals of government, can be realized and embraced by teachers and students in the field, and can make the best use of relevant expertise, while building capacity throughout the education system (Hooghoff & Bron, 2008).

Stakeholder Involvement and Engagement

The involvement of stakeholders in meaningful discussion around curriculum is required for a high-quality curriculum that will be embraced and implemented as intended. The use of technology can facilitate this involvement, providing access for a wider range of interested parties. However, careful consideration needs to be taken in determining who is at the curriculum development table, as can be seen by the decisions brought forth by New Zealand, Australia, Germany and England.

Not every stakeholder needs to be involved at every step of the development process, and the coordination of which stakeholders to involve at each step requires careful planning and insight into the various agendas of all those involved. There are trade-offs and risks associated with the inclusion, or the non-inclusion, of various stakeholder groups and the public at large at different stages in the curriculum development process.

Consideration should be given to the goals and objectives of education as a whole and in relation to a particular curriculum specifically. The end users of the curriculum, teachers and students, must be considered in its development and should be considered as key stakeholders in the engagement process. It cannot be assumed that the roles of any users will remain static over time so consideration must be given to ensure that ongoing changes in the roles of various users and stakeholders are accounted for at every step of the development process.

Conclusion

For Alberta, the synchronous development of curriculum (programs of study, assessment, and learning and teaching resources) and simultaneous development in English and French will require significant changes to the current processes for curriculum development. The development of learning and teaching resources will also need to change significantly to incorporate developments in digital platforms and broader access to online and digital resources in general. In this area, there is an opportunity to look to future trends, such as networked governance, when seeking to identify strategies and practices for curriculum development.

A networked approach to curriculum development would support the integrated development of programs of study, assessment, and learning and teaching resources (simultaneously in English and French). Key elements of any strategies and practices include a planning stage that is broad enough to encompass curriculum development, from conceptualization through to implementation and into monitoring, and an opportunity to connect the lessons learned from one development event to future curriculum developments to encourage and enable continuous improvement. The synchronous development of curriculum that blends the best of hierarchical and centralized and democratic and decentralized approaches to curriculum development will be significantly different than the strategies and processes used to date.

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