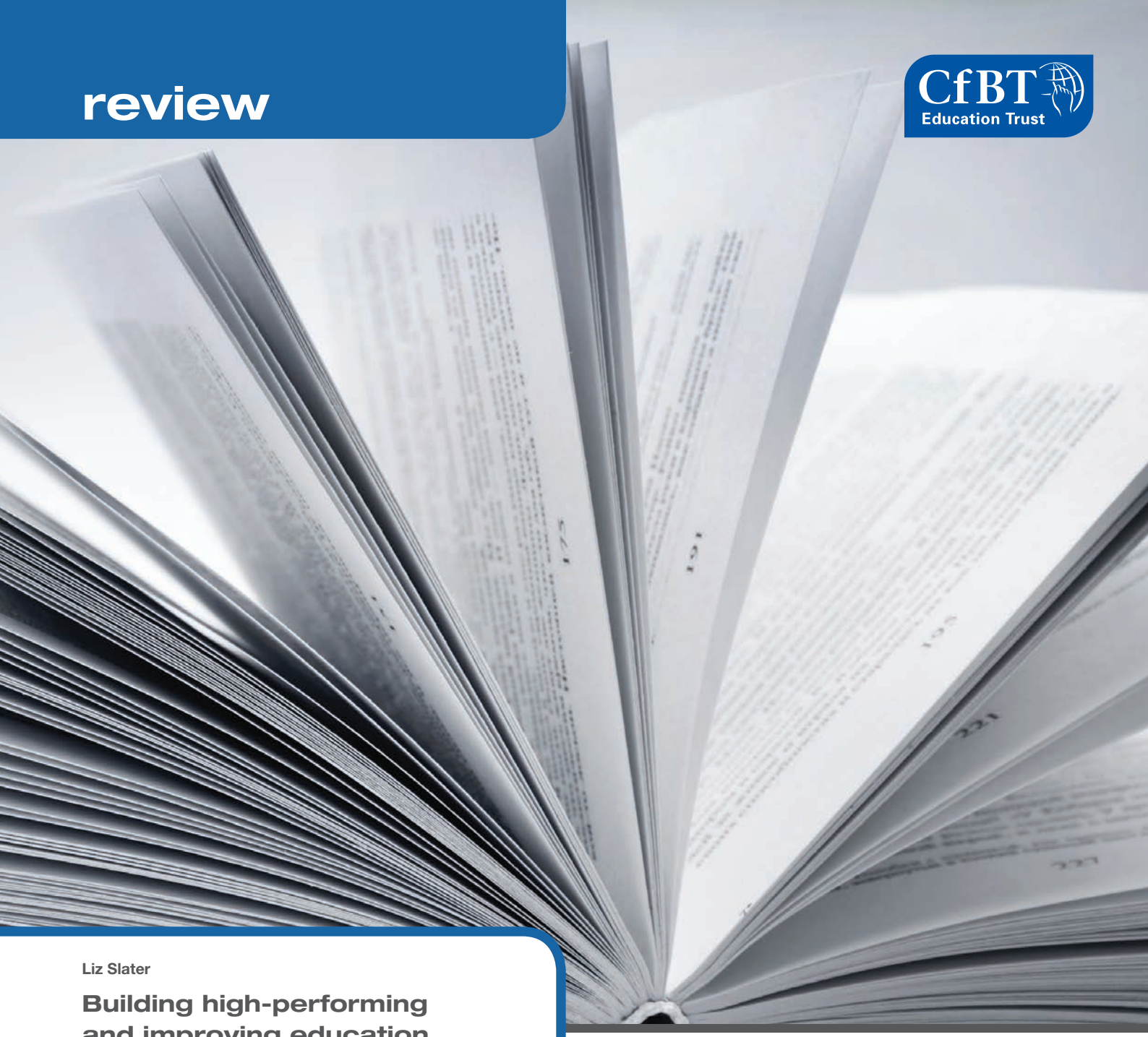
review



CfBT Education Trust

Liz Slater

Building high-performing and improving education systems

Curriculum and assessment

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Contents

1 Introduction

This Review deals with the structure and contents of the curriculum, together with curriculum delivery, including time spent on teaching and learning, the relationship between school structures (i.e. study pathways) and the curriculum on offer as well as teaching (pedagogy). It also deals with assessment. The section on assessment discusses the purposes of assessment (whether formative and/or summative), its timing and methods, as well as the roles and responsibilities of those involved. Decisions about approaches to the curriculum and assessment are closely linked to how many teachers there are, their knowledge and skills, the resources available and quality assurance.

2 Why are governments interested in the curriculum and assessment? What are the drivers for change?

High-performing systems have taken similar approaches to the curriculum and assessment during the latter decades of the 20th century and start of the 21st century.[1] High-performing systems have revised curricula to ensure that young people leaving school have:

a. the skills to enter employment or tertiary education (addressing any skill shortages)

b. a sense of social and environmental responsibility, including the commitment to playing a part in civil and political society

c. the ability to assess their strengths and weaknesses

d. study skills

e. the motivation to undertake lifelong learning.

These attributes are generally expressed as a statement of aims and values for education at the start of curriculum documents.

In many jurisdictions, including Australia, England, Ireland, Italy, South Korea, Singapore and the US, governments have set targets for participation and attainment.[2] In order to raise participation and attainment, the years of compulsory schooling for all students have been increased in the secondary phase. In general, the greater diversity of the pupils remaining in education has led to the development of a larger range of courses and qualifications. The age at which students either choose or are selected for a particular study path has also been postponed.[a]

In Hong Kong and Shanghai, for instance,[3] there has been considerable reassessment of the purposes of education – particularly secondary education – because lower-skilled jobs

[a] This is not always the case. In the Netherlands, the non-university (HAVO) and university (VWO) tracks start at 12 years of age (J. Le Métais, 2003).

are disappearing and the pattern of work for all is likely to change markedly in the future. Consequently, curricula have been re-designed to ensure that all students have a broader knowledge base and can participate in lifelong learning. This gives them a starting point from which to learn job-specific skills as required.[4] Similarly, New Zealand's curriculum changes were designed to 'meet the needs of students and the economy' so that school-leavers possess the foundations for future learning (i.e. literacy and numeracy, confidence, motivation, health, a strong sense of cultural identity and a commitment to lifelong learning).[5]

Jurisdictions on an improvement trajectory, such as Poland,[6] Chile[7] and Ghana[8] have similar objectives for their curricula. Both Poland and Chile have reviewed vocational training, reducing the number of specialisms so that the training relates to a more broadly-based job-related skill-set, allowing for the need to respond to economic changes. Ghana, in its *Report on the development of education in Ghana*[9] saw curriculum reform as a mechanism for emphasising active learning, developing competencies and skills, promoting the development of minimum standards of learning and connections between phases of education, strengthening literacy and numeracy, and supporting a shift in emphasis towards scientific, technical and vocational skills and links to the world of work.

3 If 'all [are] to succeed'[10] what issues must be addressed?

Access

A fundamental issue is ensuring access for all to basic education. Mastery of literacy and numeracy is crucial if students are going to succeed at school and beyond.[11] This can require moving resources away from secondary and pre-academic tertiary education to widen access to pre-school and primary education.[12] A more diverse student body will need a different curriculum to match students' different, but developing, abilities and rates of progress. It will also require teachers with a wider range of teaching skills. The World Bank reported[13] that Ghana had improved both the quality and quantity of schooling, increasing literacy rates and school attendance[b] by moving resources away from secondary and tertiary education into primary education. However, attainment still lags behind by international standards[14] and only 10% of students reach Ghana's mastery levels in mathematics and 5% in English.[15]

Socio-economic differences

While gender differences have reduced in sub-Saharan Africa, disadvantage is still linked to low socio-economic status and living in rural areas. Consequently, inability to attend school can be the result of something as basic as physical distance from a school.[16]

This does not have to be the case. The report on the most recent PISA benchmarking exercise[17] identified a very limited (6%) correlation between GDP per capita and the performance of students. Two countries of similar prosperity can produce very different

[b] In 1987 nearly two-thirds of primary school leavers were unable to read. At the time of the report, fewer than one in twenty are illiterate.

results, even when spending per student, relative poverty or share of students with an immigrant background is substituted for GDP. In some systems, what OECD calls the 'slope of social gradient' (i.e. size of the performance gap linked to differences in socio-economic status) is shallow, so targeting students from disadvantaged backgrounds would not, in itself address the issue. Canada, Shanghai, Korea, Finland and Hong Kong have 'gentle' slopes and achieve high levels of performance. On the other hand, in some countries such as New Zealand, Poland, Australia and Chile, socio-economic differences appear to have an impact on particular groups of students and these countries are targeting resources to address this.

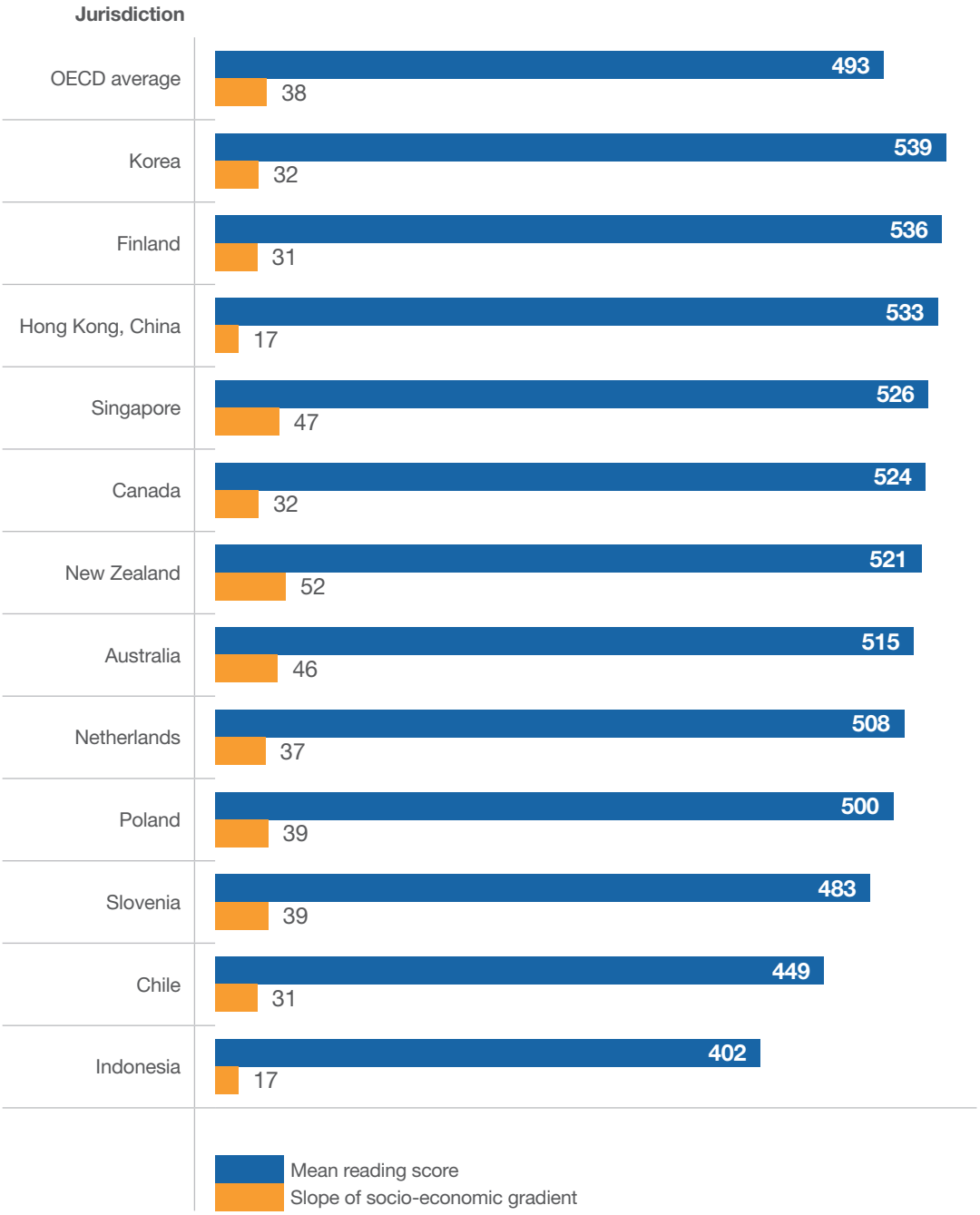
a. Despite its long-running programme of educational reform, Chile identified[18] that students in poor schools[c] scored far below average in reading, writing and maths. Research by the Ministry of Education located schools in similar circumstances whose students were performing well and identified a series of practical measures to ensure strong teaching support for each subject (See Annex A).

b. Despite New Zealand's success in international benchmarking tests, Maori and Pasifika students have lower attainment than their Pakeha and Asian peers.[19] The New Zealand government recognises this and has taken steps to deal with it.

c. In planning post-communist reforms in Poland there was concern about the gaps in outcomes between students of different social backgrounds as well as between students from rural and urban areas.[20] Poland's changes to the curriculum, assessment and school structures (e.g. delaying selection of students into academic or vocational streams) were designed to improve equity among schools. In the most recent PISA exercise, the proportion of students performing below Level 2 decreased.

[c] i.e. poor in socio-economic terms.

Figure 1. Differential impact of social background on student achievement:[21 d]



[d] The blue bar shows reading proficiency in 15-year-olds. The orange bar shows the slope of the socio-economic gradient, i.e. the average gap in performance between students of different socio-economic backgrounds. Generally the systems with higher-performing students show less steep socio-economic gradients, suggesting that socio-economic status has less impact on students' ability to achieve.

Learning to learn

While they might call the task by different names, high-performing and improving systems give attention to ensuring students are taught explicitly how to learn. In high-performing education systems, students are able to work out what they need to know and how to obtain that knowledge. They have been taught effective ways of learning (setting goals, selecting learning strategies, evaluating their understanding and making good any weaknesses). A recent Sutton Trust report which evaluated the impact of funds designed to overcome disadvantage found that strategies designed to enable pupils to learn how to 'plan, monitor and evaluate their own learning' were among the most cost-effective in terms of impact.[22]

Knowing how to learn is closely linked to literacy.[e] These students not only enjoy reading a wide range of materials (and in a range of media), but also are able to summarise material, picking out the most important points, looking for more information if they need to improve their understanding and being able to drawing out the meanings of texts. The report noted that where countries have raised students' abilities to find, interpret and think about information in different types of texts, they have raised performance: Chile reduced the proportion of students operating below Level 2[f] from nearly half in 2000 to below one third in 2009. Korea has raised its performance in reading further by doubling the percentage of students reaching Level 5 or higher since 2000. Similarly, students need to be able to work successfully in mathematics (numeracy) and science.

Gender

There are two issues associated with gender:

a. Differences in access to education; countries aiming to improve attainment have paid attention to giving girls and boys equal access to education. This is evident in countries in sub-Saharan Africa, such as Ghana.[23]

b. Gaps in performance in core subjects. OECD[24] reported that in reading, girls continue to outperform boys in all participating countries, whereas boys outperform girls in mathematics. The performance difference in science is less marked.

Taking account of teacher quality

Expansion of access can lead to a shortage of qualified teachers (as well as physical resources).[25] Improving the quality of teachers is a relatively long-term task. In the interim, careful control of teaching and learning is needed to make up for the low skill levels of teachers. Textbooks are particularly valuable in these circumstances since they can ensure the curriculum is taught accurately at a reasonable cost.[26]

[e] PISA defines 'literacy' as students' capacity to apply knowledge and skills in key subject areas and to ability to analyse, reason and communicate effectively as they pose, interpret and solve problems in a variety of situations.
[f] Level 2 is considered the baseline for participating effectively/productively in life where the levels rise from 1 to 5.

4 Handling changes to the curriculum and assessment: what works?

Matching demands to capacity

Implementation of curriculum and assessment change works best when the amount of variation allowed takes account of the levels of expertise at national, regional, institutional and community levels. (At the same time, systems can take steps to build expertise.) McKinsey & Company's report[27] differentiates between, on the one hand, those systems which are high-performing and where guidelines on teaching and learning are broad because the educators are highly skilled and, on the other, systems aiming to move from 'poor' to 'fair', where educators are less skilled and, therefore, need detailed guidelines about how they can teach with very limited scope for variation.

In New Zealand, progressive delegation of responsibilities has reflected increasing capability at institutional level. Whereas the Ministry of Education has responsibility for policy, with others such as the New Zealand Qualifications Authority responsible for the National Qualifications Framework,[28] individual school Boards of Trustees are required (through the principal and staff) to develop and implement the curriculum for students in Years 1–13. Their plans must comply with the curriculum framework document, but they can select achievement objectives to match the learning needs of their students.

Pilot projects relating to the introduction of new monitoring and assessment arrangements in Poland not only exposed staff to new ways of working, but identified areas where they needed to develop further. These included the administration, supervision, marking and standardising of tests among both teachers and administrative staff.[29]

Ghana faced difficulties in implementing its curriculum reforms, because of a marked gap between the content of the new curriculum (with its greater demands on teachers) and the actual capacity of the teachers.[30] The study carried out for the Ghana Education Service Curriculum and Research Division to plan for implementation of the Basic Education Comprehensive Assessment System found that the majority of teachers completed only 60% of the English and mathematics syllabi.[31] The critical foundations for successful curriculum delivery – availability of good instructional materials, including textbooks, pedagogical practices and efficient use of teaching time, as well as teachers who were well prepared to teach the curriculum – were lacking. Pragmatically, the report recommended that in the shorter term, tests should focus only on the core material the study had shown was taught. In order to lay the foundations for better curriculum delivery in the longer term, the study recommended setting and monitoring 'opportunity to learn' standards[g] and ensuring they were disseminated to teachers. It also advised MOESS on issues about class size, use of instructional time, INSET and the need for increased professional development for teachers, as well as the purchase of textbooks to match the revised syllabi for mathematics and English.

[g] Including measures such as instructional time, teaching/learning materials, facilities, teacher capability, curriculum content, coverage and standards.

Implementation: lead time, presentation and planning

Changes fail when politicians confuse the announcement of policy with its implementation, believing it is sufficient simply to order change. Changes to curriculum and assessment do need political will to see them through. However, they also require an understanding of history[32] and context,[33] as well as recognition of the complexity of the exercise and the range of stakeholders and interlocking systems. Drivers of successful curriculum change present a compelling case for that change. They also explain the benefits of building on good practice, are clear about responsibilities and provide practical help. Taking account of these factors means that objectives and implementation timescales are realistic. It enables stakeholders, particularly teachers, to have a sense of continuity. Involving stakeholders helps achieve the right split of responsibilities as well as drawing on expertise and practical knowledge.

Some systems have consciously set out to take account of all these issues; others have been driven to do so when stakeholders have rebelled or curriculum changes have faltered.

In launching its report on proposed curriculum and assessment reforms, the Chairman of the Hong Kong Curriculum Development Council (CDC)[34] explicitly reminded readers of the system's experience in dealing with change and referred to research evidence. However, the message was mostly meant to be reassuring, talking about the system's strengths and other contextual factors:

> *'local situations and existing strengths, our experiences gained in the implementation of curriculum development, and the findings of research studies as well as international theories on curriculum development. We have also taken into consideration the actual conditions of schools in general, the students' needs and the potential difficulties that teachers may encounter in carrying out school-based curriculum development.'*

Hong Kong's stakeholders were reassured that change would take place at a measured pace, phased over three extended cycles[h] to allow time for the growth of experience and capacity. The development strategies (see Annex B) were mapped out so that respective roles were clear. The report explicitly dealt with concerns raised during consultation, acknowledging the complexity of the exercise ('*The Curriculum Development Council takes the view that there is no fast track to curriculum development... quality matters more than quantity.*') Above all, there was recognition of teachers' anxiety, an emphasis on building on good practice and tangible measures to support development and implementation which allowed each school to start from where it was.

New Zealand took a broadly similar approach. In introducing the new curriculum,[35] Karen Sewell, Secretary for Education explained the curriculum had been revised to respond to social change, to take account of more sophisticated technologies and developments in the job market. She related it back to the previous curriculum of 1992 and reminded

[h] Short-term from 2001/02 to 2005/06; medium-term from 2006/07 to 2010/2011 and beyond 2011.

readers of the extensive development work,[i] which had already built capacity and engagement. In the same way as with the Hong Kong curriculum, the New Zealand curriculum was presented as a framework to be adapted by schools in the light of their own circumstances. This meant that teachers had the professional freedom to interpret it and plan school-based teaching to meet the needs of their students.

In both Chile[36] and Poland,[37] moves towards curriculum change were rejected initially because they came from discredited regimes. In Chile, the outgoing military government ordered change. However, when the new government tried to implement it, it met opposition from stakeholders. Recognising the political sensitivity, it spent five years preparing the ground for new proposals. In both countries, steps were taken to build consensus and expertise. In Poland, this included drawing on extensive OECD reports and putting proposals for change first to a small group of educationalists (including the rectors of HE establishments, regional and local bodies) followed by more extensive consultations with local government, the churches, professional and public bodies and other stakeholders.

In the case of Chile,[38] the Government was able to carry through education changes, including to the curriculum, over a period of more than a decade when there was broad political consensus about the overall strategy. It was able to draw on and modify the long-established (from the 1980s) evaluations of mathematics and language attainment, use international benchmarking to design and monitor implementation and lay the groundwork for curriculum change through the MECE programme of investment in innovation and pedagogy.

The long implementation period in Chile allowed for evaluation, modification, piloting and scaling up. Monitoring of the coverage of the new curriculum revealed increases between the first and second year of implementation as teachers became more familiar with the subject matter. Aside from a radically new structure, teachers were also challenged by the extended content which out-ran their own knowledge. However, monitoring meant there was time to identify topics where training was needed, rather than having to reduce curriculum content. In reviewing progress from 1990 to 2005, there had been increases in access and retention.[j] In Chile[39] development of the revised secondary curriculum took almost two years. As a result, the curriculum document became more precise in form, better known and accepted by a wider range of stakeholders. While it was possibly less innovative than originally intended, 'this was compensated by increased feasibility'.

In the Netherlands, the Government funds the National Institute for Curriculum Guidance to give independent professional advice and support for curriculum development and implementation.[40] Teachers, as end-users, are heavily involved, participating in the 'field advisory groups'[k] which issue recommendations about curriculum development.

[j] Drop-out rates declined from 12% in 1996 to 7% in 2001; higher education enrolment from 1990 to 2004 more than doubled and the two lower socio-economic quintiles increased participation in education (Cox, *op. cit.*).
[k] The groups include teachers drawn from all the regions and phases.

Curriculum change can lead to temporary drops in attainment. This is even more likely when there is increased participation by more socio-economically deprived students, as was the case with Chile's SIMCE results in 2003 and 2006.[41] Whilst it is important to find out why attainment has fallen and take steps to address the causes (if necessary), if there is broad agreement about the direction of change, it is less likely that long-term policy goals will be abandoned.

5 Why and how have successful and improving education systems changed the duration and structure of schooling alongside curriculum reform?

School structures and the duration of education

Curriculum reform is generally linked to changes in the duration and structure of schooling. The most fundamental reforms are a move from a double- to a single-shift day and the extension of the duration of free and/or compulsory schooling to allow for longer instruction time. The drive to raise the educational attainment of all students and equip them for a rapidly-changing work environment has led to policies that aim to delay the age of specialisation and/or the design of curriculum pathways so that students have the flexibility to change direction later in their school careers.

New Zealand carried out a review of the curriculum in place from 1992 to 2000/02, publishing a revised framework in 2007.[42] The result was a curriculum shaped around seven compulsory 'essential learning areas' regarded as important for a broad, general education and eight groups of cross-curricular skills. Although[43] there was no change in school structures, schools were required to provide teaching in Years 1–10 in English, the arts, health and PE, mathematics and statistics, science, the social sciences and technology. These broad learning areas provided the starting point for greater specialisation in senior school (e.g. with social studies leading to economics, history etc) as well as the addition of subjects beyond the core (e.g. classical studies, legal studies). The curriculum was specifically designed to promote smooth transitions between phases of schooling, through a focus on literacy and numeracy in Years 1–6, and further development of literacy and numeracy coupled with a broader, deeper curriculum in Years 7–10 to lay the foundations for specialisation in Years 11–13. However, the curriculum in Years 11–13 was also designed to ensure that options for later study and employment remained open. Reform of examinations supported the principle of a curriculum where students built up their knowledge in stages: the National Certificate of Educational Achievement is a credit/unit-based qualification. Students aim to achieve Level 1 at the end of compulsory education, Level 2 at the end of Year 12 and Level 3 at the end of post-compulsory, upper secondary education (age 17–18).[44 l]

In Hong Kong there has been an evolution in the curriculum as well as in the structure and duration of education.[45] The underlying standards and subject content are largely

[l] Level 1 replaced the School Certificate in 2002, Level 2 was introduced in 2003 and Level 3 replaced the University Bursary examinations in 2004.

unchanged (see Annex E), but there is an emphasis on designing the curriculum to match the needs of students and to ensure they can acquire specified values and competencies.[46] Free compulsory education has been extended to 12 years' duration, from Primary 1 (aged 6–7) to Senior Secondary 6 (aged 17–18). The Target-Oriented Curriculum of 1995 was followed by Learning to Learn in 2001 and the New Senior Secondary Curriculum in 2009.[47]

The revised curriculum for primary and junior secondary phases (the Basic Curriculum) was introduced in Hong Kong from 2001/02. It did not require significant structural changes. However, the New Senior Secondary School Curriculum framework began to be implemented from 2009 alongside a school structure comprising three years of junior secondary education and three years of secondary education leading into four years of tertiary education. Whereas the previous curriculum had two public exams (and therefore exit points) in Secondary Forms 5 and 7, the revised curriculum has only one public examination at Secondary Form 6/Year 12, with the intention that greater numbers of students should remain in education until age 17–18. While the emphasis on a broad and balanced curriculum is maintained into the senior secondary phase, this is the point at which schools are to 'offer different streams of subjects' to 'cater for the diverse aptitudes, interests and talents of students'.

In Chile, legislation in 1997 introduced the mandatory full school day. From 2004, Chile mandated 12 years of compulsory education, comprising eight years of primary education (for pupils aged 6–13) and four years of secondary education. Chile has retained two types of senior school (*liceos*) – the general (academic) and the vocational ('technical-professional'). However, the structure of the curriculum has been changed to delay specialisation from age 14 to age 16 (i.e. from grade 9 to grade 11).[48] Both strands contain both general and specialised elements in the final two years. The vocational specialisms in the final years have been revised in order to prepare students for work in an occupational sector. The number of specialisms has been reduced from 46 to 14. To maintain flexibility and choice, they are designed to prepare students for an employment sector rather than a specific job.

Ghana's own *Report on the development of education in Ghana* (September 2008) outlined a revised pre-tertiary education structure comprising two years of kindergarten, six years of primary, three years of junior high and four years of senior high school. Universal, free basic education comprises kindergarten, primary and junior high school – eleven years of education from ages 4 to 14. By 2008, 82% of students had completed a full course of primary education, so this remains an aspiration rather than a delivered structure.[49] The curriculum in the Report is matched to the phase structure, with an emphasis on a broad education focusing on six areas of learning until the start of junior high school. In junior high school this forms the basis for a programme comprising a core and specialised pathways (see Annex C). Alongside this, Ghana has Complementary Basic Education, designed to offer structured learning outside the formal school system.

The programmes are learner centred, skill-based and include functional literacy. They enable students to return to mainstream education.

Instruction time and other requirements for learning

Even with complementary school structures and curricula in place, the quality of student learning is dependent on a range of factors that have been described under the heading 'opportunity to learn'.[50] They include hours in the school year, days the school is open, teacher attendance and punctuality, student attendance and punctuality, teacher/student ratio, instructional materials per student, time in classroom on task, and reading skills taught by grade. These are the absolute essentials for learning. They are of more fundamental importance than factors such as teacher qualifications, whether the curriculum is learner-centred or the use of continuous assessment.

Making time available

Irrespective of the quality of the teachers, if instruction time is insufficient, learning will be affected.[51]

The *Opportunity to learn*[52] report recommends a minimum instruction time of 850–1,000 hours per year in developing countries. Target instruction time may well differ from actual instruction time because of teacher and student absence, abbreviated lessons and the interruption of other activities. Consequently actual instruction time needs to be monitored.

High-performing and improving systems are broadly in line with this recommendation. Hong Kong specifies 887 lesson hours[m] per year for primary school students and 1,013 for junior secondary school students. New Zealand recommended (in 1999) instruction time of 950 hours per year, except for Years 1 and 2 where recommended instructional time equates to four rather than five hours per day.[53] After the reform of the secondary structure, Chile specified that students should have 6,552 hours of instruction over four years.[54]

Ensuring instruction time is used effectively

Ghana requires[55] 1,000 hours of instruction per year of which English and mathematics comprise 40%. In preparing for national assessment, Ghana carried out studies[56] to identify potential issues. The survey found that lessons in many schools did not start on time and instructional time was interrupted. More than half the teachers did not follow the timetable and, partly as a result of poor use of instructional time, coupled with difficulties with curriculum content, the majority of teachers were able to cover only up to 80% of the content of the English syllabus; a third covered only 50% (with similar findings for mathematics). Both this report and the subsequent report on disappointing BECAS outcomes[57] identified the need for establishment of the 'opportunity to learn' standards and monitoring to ensure compliance with them.

[m] but only 776 hours in bi-sessional schools.

Extending learning time

High-performing education systems extend learning beyond school instructional time.

a. The most obvious way to do this is through homework. This is a strong tradition in the cultures of Asian systems such as Hong Kong and South Korea. Hong Kong's Curriculum Development Council recognised the both parents and teachers valued homework.[58] The reforms have aimed to build on the commitment to homework, while encouraging teachers to set tasks that extend learning and to explain their approach to parents. Small-scale research[59] recognised the value of homework as a way of reinforcing learning and deepening understanding. The research recommended a light homework load for junior primary students and a 'moderate' load of up to two hours a day as 'optimal' for senior primary students. Guidance to teachers advised[60] that for homework to be effective, the teachers should monitor time spent on it by students, identifying those students who needed tutoring to improve their study skills and offering advice. In addition, it identified 'learning time' as comprising not just lesson time, but also other time in school, including lunchtimes and the time that the school remained open after lessons. Schools were urged to make links between this school-based learning and 'life-wide' learning outside school (e.g. via community service, physical and aesthetic development and career-related experiences).

b. Where the home environment is poor, completing homework and carrying out enrichment activities becomes less easy. In Hong Kong, in addition to giving pointers about possible enrichment activities,[61] innovative schools are timetabling homework periods during school hours.[62]

Access to textbooks is the key to extending learning beyond school in systems still building capacity.[63] The study of opportunity to learn carried out to support BECAS in Ghana identified unequal availability of textbooks as an issue in 2005. Subsequently, the Minister for Education reported in 2010 that the student/textbook ratio in core subjects in basic and senior high schools, as well as in technical institutes, was now 1:1.[64]

Access to education in a second language

In many countries where English is not the first language, there is pressure for it to be used as the language of instruction – usually at junior high school level – because of the economic benefits it brings. Not surprisingly, the World Bank found a positive link between language proficiency and understanding (with obvious implications for performance in tests and examinations).[65]

In high-performing systems, such as Hong Kong, the emphasis is on developing the ability to use language in 'authentic' situations.[66]

6 How are strategic aims translated into curriculum structures?

In its report on the outcome of the 2009 PISA exercise, OECD identified features common to high-performing students. They include the ability to apply knowledge and skills in key subject areas, and the ability to analyse, reason and communicate effectively as they pose, interpret and solve problems, as well as mastering strategies to assist learning. These students' literacy skills extend beyond simple reading ability. They have learnt methods to help them remember, understand and summarise texts.[67]

In order for students to demonstrate these skills and knowledge, they need a firm foundation of literacy and numeracy as well as access to a balanced and broadly-based range of subjects. They also need to develop values, attitudes and skills that will allow them to learn not just in school, but throughout their lives.

Literacy and numeracy

The OECD[68] defines literacy – in reading, mathematics and science – in terms of students' 'capacity to apply knowledge and skills in key subject areas and to their ability to analyse, reason and communicate effectively as they pose, interpret and solve problems in a variety of situations'. The 2009 report not only looked at how students in different countries performed, but also looked at how performance might be linked to cultural differences. In some cultures, students were better at direct reading tasks requiring them to find and interpret information; whereas in other cultures, students were better at reflecting on the implications of the content. Both types of skill are required. Policy and planning in some countries includes provision to make sure students develop both types of skills.

High-performing countries as well as those on an improvement trajectory put considerable emphasis on ensuring their students are literate and numerate. In New Zealand, literacy is seen as fundamental to learning: 'As language is central to learning and English is the medium for most learning in the New Zealand curriculum, the importance of literacy in English cannot be overstated.'[69] Consequently, in Years 1–6, the focus is on ensuring a sound foundation of literacy and numeracy skills, reinforced in Years 7–10. Since 1997, many schools have assessed pupils shortly after entry at the age of 5[70] in order to plan teaching programmes and to enable the Ministry of Education to build up a database to inform[71] policy.[n] From 2010, the National Standards for reading, writing and mathematics came into effect[72] to tackle the fact that 20% of students continued to leave school with inadequate literacy and numeracy skills. The Standards showed how teaching might be carried out and the outcomes to be expected of primary students in terms of performance at particular ages (i.e. skills that become progressively broader and deeper). The Standards are linked to existing effective literacy practice. They make clear the literacy demands of the entire curriculum, so that teachers can build literacy content appropriately

[n] The assessments look at emerging concepts about print (literacy), numeracy and oral language.

into all curriculum subjects. Teachers' judgements about students' performance need to take account, not just of how well a student is reading and writing, but how the student is using reading and writing as learning tools. (For further information, see Annex D.)

Although Chile's education reforms have been designed to improve both quality and equity, children in poor schools reportedly[73] scored far below average students in reading, writing and mathematics. Learning lessons from good practice in successful schools in similar circumstances, as well as from international experience, the Ministry of Education put in place measures from 2002 to improve performance. Overall, the aim was to have high expectations of both students and teachers and to give strong teaching support for students in all subjects. Measures included the establishment of early reading routines for all children in first grade, clear planning at all levels with monitoring of lesson delivery, and teaching routines common to all subjects and levels to achieve basic skills. This included 15 minutes' silent reading or mental arithmetic, a daily story hour for young children, a weekly hour at the library and a monthly theme around which students read, write, investigate and discuss. (For more details, see Annex A.) The OECD reported that Chile had shown significant increases in its reading scores in 2006. (There was a further small rise by 2009.)

Subjects

What subjects are studied and when?

Children usually start school (sometimes after attending pre-school/kindergarten) between the ages of five and seven. In the Czech Republic, for instance, 90% of children enrol aged five. In Poland, Slovenia, South Korea and Finland children enrol aged 6, whereas in the Netherlands they do so aged four. The first phase of school is designed to offer a broadly-based curriculum. While this becomes progressively more specialised, even in the vocational schools, a broad base of subjects is retained.

In Poland, for instance,[74] primary education is divided into two phases. The first, for grades 1–3 (for students starting aged 6–7) comprises an integrated curriculum taught by the classroom teacher and required to cover Polish language, music, art, social issues, natural sciences, mathematics, a modern foreign language, ICT, technology and PE – along with flexible time to be used as the headteacher considers appropriate to 'increase pupils' educational opportunities' – and either RE or ethics. In the second phase of primary school (grades 4–6) the broad base is somewhat extended (e.g. by the addition of history and physics) and taught by subject specialists. Building on this base, lower secondary education (for students aged 13–16) further splits out some subjects (e.g. introducing physics and astronomy, chemistry and biology in place of natural sciences) so they can be taught in more depth.

Even when students in Poland move into different types of school for the upper secondary phase, all continue to have access to a broad curriculum, though it differs in the detail. Students in general and specialised high schools follow a three-year compulsory

programme comprising Polish language, two modern foreign languages, history, civic education, culture studies, mathematics, physics and astronomy, chemistry, biology, geography, introduction to management, IT, PE and defence training. The curriculum in technical schools follows a four-year programme that is similar, but includes, additionally, 50 hours per week of vocational training (over the four-year period) relating to a particular profession. Students in vocational schools, where the programme lasts two years, have a similarly broad curriculum, albeit some subjects (e.g. history/civic education) are combined. Their programme includes 34 hours of vocational training per week (over the two-year period).

New Zealand takes broadly the same approach, identifying in *The New Zealand curriculum for English-medium teaching in Years 1–13*[75] a series of learning areas seen as essential for a broad general education: English, the arts, health and PE, learning languages, mathematics and statistics, science, social sciences and technology. The learning areas are structured to provide the foundation for later specialisation in senior school. For instance, the achievement objectives 1–5 for social studies form the starting point for separate social studies disciplines[o] at Levels 6–8 in senior school.

When Hong Kong began implementing curriculum reform in 2001, existing subjects were grouped into blocks called Key Learning Areas (KLAs): Chinese Language Education, English Language Education, Mathematics Education, Personal, Social and Humanities Education, Science Education, Technology Education, Arts Education and Physical Education. Schools providing basic education (i.e. for students in Primary 1 up to Secondary 3 or between the ages of 6 and 14)[76] were required to ensure that students all had the opportunity to study subjects from each of the KLAs to provide a broad and balanced curriculum. The New Senior Secondary Curriculum[77] introduced the concept of core subjects for all, with different pathways and electives open to students. Core subjects comprise Chinese language, English language, mathematics and liberal studies. (See Annex E.) Students then choose electives from three categories: NSS subjects (e.g. Biology, Accounting and Financial Studies, Chinese History, ICT); Applied Learning Subjects (e.g. Design Studies, Sports, Civil and Mechanical Engineering) and Other Language Subjects (e.g. French, Japanese, Hindi). Students may take two or three subjects or up to a maximum of eight subjects.

While there are contextual differences, similar patterns are evident in improving countries. (See Annex C.)

How are subjects structured? How does the structure support progression?

Subjects need to be structured so there is a common understanding of their aims and content, and to ensure that students have access to a coherent curriculum where important material is covered. The structure gives teachers a common framework, language and set of tools to discuss and plan their teaching programmes.

[o] For example, social studies, history, geography and economics *(INCA: New Zealand)*.

Curriculum documents generally:

a. start with an overarching description of the aims of the subject and the reason for studying it

b. break the subject into a series of strands or dimensions, which may separate out or integrate knowledge with the acquisition of skills

c. follow this with detailed learning objectives, often including a behavioural element to identify the performance/action required of the student; the emphasis goes beyond subject knowledge to the ability to gather, synthesise, interpret, evaluate and apply knowledge

d. use language and terminology (and sometimes even typography) to set out the learning objectives so that it is possible to see how each objective builds on and expands on its predecessor objective

e. link the learning objectives to age ranges and/or schooling cycles (e.g. KS1, lower secondary).

In Hong Kong, curriculum guidance for each of the KLAs follows broadly the same pattern, including a chapter setting out aims, learning targets and objectives:

a. The aims and targets are at a high level. For example, the 'subject' target for English Language is for learners to develop an ever-improving capability to use English, including the capacity to think and communicate.

b. The learning targets break down the abilities to be developed through the particular KLA. In English language these are interpersonal skills, acquisition, interpretation and use of knowledge to solve problems, and experience – that is, the ability to respond to/express real and imaginative experience – largely through literary or creative texts.

c. The objectives lie within the learning targets and are written so that it is possible to see how each level deepens and expands prior learning.

For instance, the objectives for the Knowledge Learning Target in English language include:

a. At KS1 (i.e. P1–3): To recognise some obvious features of the English language in simple spoken and written texts such as the direction of writing in English, the characteristics of an alphabetic script and the sound patterns of English; and apply this awareness to one's initial learning and use of the language.

b. By KS2, this has become: To understand some aspects of how English language works, including how grammatical features contribute to meaning and how simple texts are organised; and apply this understanding to one's learning and use of the language.

c. By KS4 (S4–5), the related objective is: To understand how the English language works in a wide range of contexts and how more complex texts are organised and expressed; and apply this understanding to one's learning and use of the language. (More details are available in Annex E.)

Achievement objectives in the New Zealand curriculum are broadly similar, though the structure of the objectives differs according to subject area and there is even more emphasis on describing what students can do, and, therefore, the evidence of attainment that teachers are to look for.[p] The English Essential Learning Area[78] is divided into two strands, each including oral, written and visual forms of the language in two modes:

a. Making meaning out of ideas or information students receive (listening, reading, viewing)

b. Creating meaning for themselves or others (speaking, writing, presenting)

As they progress through the levels of performance, students in New Zealand are expected to develop and demonstrate knowledge, skills and understanding in relation to:

a. text purposes and audiences

b. ideas within language contexts

c. language features that enhance texts

d. the structure and organisation of texts.

(See Annex D for more details.)

Similar frameworks exist or are under development in other countries including Chile,[79] Australia (e.g. Queensland), Canada (British Columbia) and South Korea. In the Netherlands, the National Institute for Curriculum Development has developed guidelines for primary education in mathematics and Dutch for primary schools. These include goals to be achieved and appropriate subject matter.

Which parts of the curriculum are prescribed? What are the appropriate flexibilities?

All governments have a duty to make sure that students have access to an agreed amount of education, covering the content and skills they have determined are appropriate. Beyond that, the amount of regulation of school-level and even classroom-level curriculum plans and teaching programmes will depend on the knowledge and skills

[p] This is a reflection of the fact that New Zealand teachers carry most of the responsibility for student assessment.

of the teachers and the extent to which there is a shared understanding of the purposes of the curriculum and assessment.

This is broadly true of high-performing and improving education systems. However, there are differences in approach, even among high-performing systems, deriving from past experience and cultural background.

In South Korea, the Ministry of Education, Science and Technology publishes the national curriculum in the form of circulars which prescribe the range of subjects to be offered at each level, content and time allocations.[80] In Hong Kong, the underlying syllabi have remain unchanged since 1999. The Report from the CDC setting out proposals for curriculum change[81] clarified where the schools have discretion. They must adhere to CDC requirements for learning time, learning targets and essential content, to ensure students receive their entitlement. However, schools have flexibility about the way they organise curriculum content, contexts and examples, learning and teaching strategies, the pace of learning and teaching, homework, as well as criteria and modes of assessment. Schools are also able to take account of their strengths; while they have to make available subjects from within each KLA, there is no expectation of out-of-field teaching (that is, asking teachers to teach subjects in which they are not 'specialised'). Similarly,[82] in designing the New Secondary School Curriculum, schools were allowed to choose the electives to offer.

In the Netherlands, the Ministry of Education has legislated to establish attainment targets which describe the subject matter to be covered.[83] Neither teaching approaches nor time allocations are prescribed. The Ministry of Education provides short documents covering core objectives for primary education (ages 5–12) and secondary education (ages 12–16). Schools are free to group these into subjects, projects or areas of learning. Schools are accountable for their curriculum policies and have to demonstrate how they have included all the attainment targets in their curriculum.

New Zealand takes a similar approach while offering considerable guidance. The revised New Zealand Curriculum for English-medium teaching and learning in Years 1–13 gives comprehensive advice on teaching, curriculum review, the achievement objectives for the essential learning areas and assessment. While schools have a legal duty to teach the essential learning areas, as well as meeting the requirements relating to principles, values and key competencies, the responsibility for curriculum design rests with them.[84] The essential learning areas can be taught as distinct subjects or linked. However, in reviewing and developing their curriculum, schools are encouraged to use the overall Learning Area Statements for each Essential Learning Area to construct programmes rather than fragmented achievement objectives. There is the flexibility to teach the Essential Learning Areas as distinct subjects or in linked blocks. The priority is to have statements of learning expectations that clearly build on students' prior learning and are understood by teachers, students and parents. However, concerns about literacy and numeracy led to later

introduction of requirements for integration of National Standards materials – although actual decisions about how this was to be done rested with schools.

Delegation of increasing responsibility and autonomy to schools depends on ensuring they have the capacity and shared understanding of educational purposes. In Poland, there have been continuing developments to the curriculum. Legislation in 1999 and 2002, with changes in 2009, has determined the core curricula, outline timetables and the school year. Within this framework, schools have had the flexibility to design their own curricula and the headteacher is able to use the flexible hours (12 hours per week in primary, reducing in secondary) for activities he or she considers will 'increase pupils' educational opportunities'. However, the Government planned to introduce further changes by 2012 to give more freedom in terms of timetables, assessment and examinations. From 2009/10, for instance, the timetable for lower secondary school no longer specified subject hours per week, but instead minimum hours of instruction per subject in a three-year cycle (e.g. Polish language 450 hours, mathematics 385 hours).[85]

Sub-Saharan countries including Ghana[86] are moving to simplify the curriculum so that it contains a 'more focused, cost-effective and manageable structure'. This move makes it easier to gather data to monitor compliance. At present Ghana cannot be confident that the curriculum is being taught. *The National Action Plan: Education for All: Ghana: 2003–2015* planned to strengthen the supervision and inspection systems from 2004.

Cross-curricular themes/skills

Acquisition of sound and up-to-date subject knowledge remains important. However, high-performing and improving countries have also identified a range of skills and competencies they consider critical to successful learning, participation in society and contribution to the economy. They are presented in a variety of ways, reflecting countries' particular cultures, values and circumstances, but include an increased emphasis on the development of skills and competencies associated with working life.[87] This is stated explicitly in the curricula of many countries (e.g. Australia's key competencies, Alberta, Canada's essential learnings, and the Netherlands' core objectives) with guidance about how students can gain relevant experience (e.g. Hong Kong CDC Report and Curriculum Guides):

a. Critical thinking and problem-solving

b. Study skills and the capacity for independent learning; the capacity to recognise areas of weakness and strength, laying the groundwork for lifelong learning

c. Health, physical development, exercise

d. Interpersonal and social skills, including teamwork

e. Environmental issues/sustainable development

f. Developing creativity/artistic/creative/cultural skills. J. Le Métais noted that a recent thematic INCA study had shown increased emphasis on creativity within curriculum, attributing it in part to its links to economic competitiveness. However, it is difficult to assess, especially in high-stakes assessment regimes (e.g. England)[88] which may limit the attention creativity gets in the classroom

g. Citizenship, i.e. the preparation of students to participate in society and the transmission of values regarded as appropriate by the particular system (e.g. Poland reflects its increased European orientation).[89]

New Zealand's revised curriculum[90] for instance, has a 'Vision' for young people to be confident (e.g. motivated and reliable, positive in their own identity), connected (ranging from interpersonal skills, through responsible citizenship to use of ICT), actively involved (e.g. contributing to the social, economic and environmental well-being of New Zealand) and lifelong learners. The related competencies include: thinking, using language, symbols and texts, managing self, relating to others, and participating and contributing. In addition to stressing the critical importance of literacy and numeracy, the revised curriculum makes explicit the need to give students the specialised tools to learn each subject:

a. Specialist vocabulary for the area

b. How to read and understand [the subject's] texts

c. How to communicate knowledge and ideas in appropriate ways

d. How to listen and read critically, assessing the value of what they hear and read

The reformed Hong Kong curriculum for basic education[91] identified similar generic skills, including collaboration, communication, creativity, critical thinking, information technology, numeracy, problem-solving, self-management and study skills,[q] with priority given to critical thinking, creativity and communication. The New Senior Secondary Curriculum[92] designed 'for all to succeed', was based on 15–35% of learning time being devoted to learning experiences other than the core and elective subjects, including moral and civic education, aesthetic education, career-related experiences and physical development.

In Hong Kong's curriculum, the underlying subject knowledge and standards remain largely unchanged from the 1999 syllabi, giving continuity. But the approach to teaching has changed. Instead of the curriculum as 'documents', it is to be designed as 'learning experiences'[93] categorised as: moral and civic education, intellectual development, community service, physical and aesthetic development, and career-related experiences. In the first phase of implementation, scheduled for 2001/02 to 2005/06, the CDC invited schools to review their current position and, if ready, to begin to develop school-based curricula. The CDC also stressed the importance of 'the four key tasks' to promote effective learning and teaching, i.e.

[q] For instance, the curriculum guide for Maths for Primary 1 – Secondary 3 talks about acquiring not just knowledge and skills, but learning how to learn. *Mathematics education: KLA curriculum guide (Primary 1 – Secondary 3)*. HK CDC, 2002.

a. Moral and civic education to establish values and attitudes (e.g. responsibility, perseverance, national identity)

b. Reading to learn – strategies for learning more effectively

c. Project learning – to develop generic skills and build knowledge

d. Using ICT for interactive learning

Revisions to Chile's secondary curriculum show the same changes in favour of an emphasis on skills and competencies rather than simply subject knowledge, updating and enriching subjects or requiring higher standards of achievement, ensuring relevance by linking school work to students' own lives, as well as the promotion of values, such as 'civic habits', democracy and human rights.[94]

Ghana expresses similar aspirations.[95]

7 Assessment

What are the purposes of assessment?

While they have different rates of progress, high-performing and improving education systems are changing their assessment systems alongside changes to their curricula (and study pathways). Their purpose is to ensure that as many students as possible achieve as much as possible. Therefore, the focus is on:

a. establishing standards and benchmarks as a basis for the diagnostic evaluation of students' performance

b. designing qualification systems that allow transfer between different study routes.

Assessment has three main objectives:

a. To improve student learning i.e. formative assessment[r]

b. To help decisions about selection for particular education pathways, and/or

c. To award qualifications i.e. summative assessment.

In Poland, for instance, the functions of the national system of examinations are to award qualifications, to provide information on student strengths and weaknesses, and to assess the effectiveness of teaching.[96]

[r] Most forms of assessment have the potential to contribute information about students' prior learning, which is vital information for teachers planning for progression.

In addition, systems are looking for data that will enable them to monitor the performance of system components and make adjustments to them to improve education overall. One of the sources of such data is student assessment. Monitoring might also include setting and monitoring targets for educational outcomes at school, regional and national levels. Singapore,[97] for example, sets education targets in line with manpower planning and economic and social development strategies.[s]

There are common features to high-performing and improving systems' assessment arrangements:

a. A framework of qualifications, differentiated by levels of attainment/qualification, as well as the number and types of subjects taken by students

b. Reductions in the number of qualifications, for example in Poland, Chile and Hong Kong. This is particularly noticeable in vocational areas, where more broadly-based groupings are designed to provide a flexible basis for greater specialisation when the need arises.

c. Reliable standards, linked to the curriculum, based on detailed descriptions of student performance at different levels and developed in close collaboration with the teaching profession; New Zealand's Ministry of Education and Qualifications Authority[98] contracted the subject associations to consult the education sector on proposed new standards and subsequently to write the draft standards. Ghana's objectives in developing the Basic Education Comprehensive Education System[99] included the establishment of standardised measures of learning at particular levels and times in the basic education system, setting realistic expectations in laying down examination standards to reflect the curriculum specified by Ghana Education Service and using the results for improvement at school and system level.

d. External administration and monitoring to ensure objectivity, reliability and credibility of assessment: Poland's Regional Examination Boards are responsible for the Competency Test in Year 6 of primary school, the Lower Secondary School (Gymnasium) Examination in Year 3 of lower secondary school which contributes to decisions about students' subsequent destinations, the 'New Matura', which is the basis for entry to universities and colleges of further education, and the vocational examination.[100] In New Zealand,[101] the New Zealand Qualifications Authority sets the standards for secondary school qualifications, manages the external assessment of secondary school students, moderates the quality of internal assessment, maintains students' electronic Record of Achievement, produces reports on national assessment (including individual schools' assessment capability), monitors results over time, and advises on improvements to policy and practice.

[s] The 2000 target was for 25% of students to achieve a university degree and for a further 40% to achieve polytechnic diplomas. By 1999, more than 70% of students had progressed to higher education.

e. A reduction in the number of high-stakes tests used as gateways to progression. Hong Kong has eliminated the Academic Aptitude Test[102] at the end of primary school as well as the Hong Kong Certificate of Education Examination, which governed progression to the final two years of secondary school and, therefore, access to university. Ghana has two gateways to progression: the Basic Examination Certificate in Education after nine years of education, giving access to secondary education, and the Senior Secondary School Examination Certificate giving access to tertiary education.[103]

f. While it may be desirable and cost-effective to use student assessment for formative and summative purposes at individual student level, as well as for policy-making, it is often difficult to do so. This is partly because monitoring data may be insufficiently fine-grained for formative use and partly due to the need to develop the ability of school leaders and teachers to interpret the data and apply findings to improve teaching and learning – as Chile has found.[104] New Zealand[105] puts the main focus on the student, considering that assessment can be used to achieve improvement if learning from assessment at classroom, school and system level is brought together. In this scenario, teachers' assessment capability is crucial. In addition to data coming from individual students' formative and summative assessment outcomes, New Zealand uses specially-trained teachers[t] to carry out the National Education Monitoring Project,[106] which is specifically designed to inform policy.

g. Development and use of a range of assessment instruments[107] to ensure that the knowledge and skills in curricula are tested appropriately. Assessment arrangements drive what is taught.

What forms of assessment are available?

Assessment can be carried out in a range of ways, including: tests and examinations, oral assessment (including formal oral examinations and classroom discussion, for example), portfolios, projects, and practical work (e.g. scientific experiments, creation of artefacts).

The selection of the assessment tool needs to take account of:

a. the knowledge and skills to be tested

b. the capabilities of those undertaking the testing

c. the familiarity of the students with the form of assessment.

In Ghana, a review[108] of national (sample) assessment identified the need for continued training for test administrators, to ensure students were able to deal with the mechanics of completing the test and a requirement to ensure test administration was monitored by staff who were thoroughly briefed. Poland prepared for national monitoring[109] by carrying out pilots which showed similar problems. Since, at that stage, teachers were not used to supervising and marking externally-set assessments, the pilots were organised and

[t] A sample 3% of children in Year 4 (8–9 years), Year 8 (12–13) were involved in the National Education Monitoring Project: (a) Annual, covering all curriculum areas over a 4-year period; (b) Circa 3,000 students / 260 schools selected randomly; support/approval of parents/schools sought

supervised by regional coordinators and pupils' responses were marked by the survey team to ensure consistency. This built a core of experts who were available to train teachers later.

When introducing new curricula, improving systems need to establish reliable banks of test items as well as supporting processes. Poland established Central and Regional Examination Commissions[110] and drew on external expertise, including working with the former Associated Examining Board and Brunel University.[111] Ghana's BECAS project[u] was used to develop National Education Assessment (NEA), School Education Assessment (SEA) and Continuous Assessment (CA).[112] Seventeen sets of assessment instruments were produced and the Ghana Education Service staff were trained to use and adapt them for monitoring and diagnostic purposes.[v]

In systems where teachers and administrators are experienced and syllabi, standards and processes are well-established, the challenge is to introduce more sophisticated forms of assessment, focusing on individual students. In introducing the curriculum changes at the start of the 21st century, Hong Kong promoted new assessment tools as well as the use of formative assessment. Despite support and reassurance, these changes have proved technically challenging and time-consuming.[113]

Formative assessment: improving student learning

What is formative assessment?

Formative assessment is a process of gathering a range of data about students' performance in order to evaluate learning and diagnose areas needing further work. Student-centred, formative assessment is a goal for high-performing and improving systems which see it as a mechanism for driving improvement from the individual student in the classroom up through the system.[114]

The OECD identified four benefits to formative assessment:[115]

a. A link to marked gains in student attainment

b. Improved equity of student outcomes

c. Teachers being able to identify why students are learning differently and adapt their teaching to meet individual needs

d. Enabling students to develop their learning skills, including the ability to evaluate their work against clear criteria.

[u] Basic Education Comprehensive Assessment System: a three-year project funded through USAID EQUIP

[v] NEA: curriculum-based competency assessment, sampling the performance of schools across Ghana. Assessment against national benchmarks of performance for pupils in grades 3 and 6 in relation to English, mathematics and Ghanaian language. SEA: links specific test items to core objectives; administered every two years at grades 2, 4 and 6. Designed to be used as a diagnostic tool to inform teachers (and to provide information for communication to parents). Continuous assessment: to be used in grades 1 and 3 for diagnostic purposes by teacher. Republic of Ghana: *Report on the development of education in Ghana*, September 2008.

How is formative assessment used?

In New Zealand, where there has been a long period of curriculum and assessment development, teachers are expected to make both tacit[w] and explicit judgements based on information from a wide range of sources (to improve reliability), informed by detailed guidance and exemplification. In Hong Kong, which has placed a greater emphasis on the use of tests for internal assessment and planning purposes, teachers are being encouraged to select the most appropriate assessment tool or use other mechanisms to evaluate and give feedback on students' progress.[x] This is difficult for teachers: it requires them to learn new skills. It also requires them to change approaches: they have seen testing as a way of practising for final examinations as well as a way of spotting areas for improvement. Moreover, parents expect high levels of testing, homework and 'exhortations to work hard'.[116] Therefore, in addition to providing support for student-centred assessment, policy-makers have advised on communications with parents to develop understanding and cooperation.[117]

Assessment geared to improvement also depends on the commitment of students and their parents. In Poland, for instance,[118] students and parents are informed about assessment requirements. Students are told what is expected of them in order to obtain a 'good' or 'satisfactory' grade as defined by reference to the curriculum and standards of achievement for each stage of education. In Hong Kong, the CDC advises[119] that students should be involved so that they learn from the process (for instance, by thinking about what they have learnt) as well as achieving outcomes (such as passing examinations), knowledge and skills (such as problem-solving). Culturally, there is a long-established belief that students have responsibility for their own improvement.[120]

Making selection decisions and awarding qualifications

What is summative assessment?

Summative assessment is used to decide whether students will progress from one class/grade to the next at the end of the academic year, their eligibility for the next institution or scholastic pathway, and the qualifications they will receive.

It often differs according to the age of the student, generally (though not always) becoming more formal and externally-designed in the secondary phase.

Relatively few systems hold back students who have failed to demonstrate competence. In Poland, progression is dependent on achievement of satisfactory grades for all subjects. However, students also have the option of taking an examination if they dispute the school's assessment.[121]

[w] That is, running judgements, possibly not even written down, used to adjust teaching during lessons. For instance, the NZ Curriculum for English-medium teaching and learning in Years 1–13 advises on assessment: 'Analysis and interpretation often take place in the mind of the teacher, who then uses the insights gained to shape their actions as they continue to work with their students.' Evidence is 'of the moment'.

[x] For example, observation notes, checklists, logbooks, portfolios, photographs, recordings, annotated work; combining course marks and examination marks; using grades or profiles rather than marks.

In many systems, assessment in the primary phase is carried out by the classroom teachers, though there may be national testing at a transitional point to monitor overall performance. In Poland, in Years 1–3, teachers assess students and make a descriptive assessment. In primary Year 4, this is replaced by termly and annual grades for each subject (and behaviour). In order to progress to secondary school, students must take a Competence Test lasting an hour. It integrates subjects and tests skills and abilities against the attainment standards for reading, writing, reasoning, using information and applying knowledge. It was introduced in 2002 and is used for monitoring and diagnostic purposes.[122]

The next transition point tends to be at the end of basic education/lower secondary education, when students are aged around 15 and/or at the end of their time in school. Assessment generally covers a broadly-based core curriculum, though there may already be some scope for specialisation. In Poland, this comprises a two-part external examination: the first part tests the humanities and the second science (including mathematics and geography, as well as pure sciences). Results are taken into account when determining students' subsequent education.[123] In New Zealand, the NCEA comprises credits which are awarded on the basis of formal assessments carried out both internally (i.e. by teachers) and externally. In Chile, building on curriculum reforms, in 2000 university entrance examinations were changed from a scholastic-aptitude type test to one relating to the curriculum. This was introduced to strengthen students' preparation for undergraduate education and improve the motivation of students and teachers.[124]

Hong Kong replaced the Hong Kong Certificate of Education Examination (which determined whether students could progress from Secondary 5 to Secondary 6) and the Hong Kong Advanced Level Examinations (which determined entrance to university and other tertiary courses) with the Hong Kong Diploma in Secondary Education. Doing so not only removed a barrier to further education, but also introduced moderated teacher assessment alongside an external terminal examination. However, in keeping with the principle of continuity underlying curriculum reform,

a. comparability was maintained with the standards[125] of HKCEE and HKALE[y]

b. the learning targets related closely to the Bands of Learning set out in the syllabi.[z]

Why use standards-based assessment? What do the standards look like?

High-performing and improving systems have established close links between the curriculum and assessment so that assessment is carried out on the basis of objective descriptions of what students know, understand and can do. The OECD reported[126] that in systems using standards-based external examinations, students tend to do better overall, with smaller gaps in performance between students of different socio-economic backgrounds.

[y] Levels 4 and 5 of HKDSE were anticipated as equating to grades A–D of HKALE.

[z] For example, the English Language Learning Target for Key Stage 4 (S4–5) in the Interpersonal Strand is: 'To establish and maintain relationships and routines in school and community and work situations'. The comparable Dimension from the syllabus is: 'Learners are able to establish and develop relationships in a variety of contexts; to converse on a range of topics fluently; to participate effectively in working with others; and to provide and obtain information and services in a range of real and simulated situations'. (For more detail, see Annex E.)

Standards enable education systems to establish systematically-organised qualifications pathways.[127] New Zealand[128] has moved away from norm-referenced assessment to standards-based assessment, set out in achievement objectives which describe what students can do and, therefore, the evidence teachers are to look for. The objectives show how students' capabilities are built up.[aa]

Development of standards in New Zealand has enabled the creation of a clear and logical national qualifications framework supporting lifelong learning. In schools, standards match curriculum levels 1–8. In 2002 the National Certificate of Educational Achievement replaced the School Certificate, sixth-form certificates and university bursaries. Students are awarded National Certificates when they have accumulated sufficient credits by being assessed against National Qualifications Framework standards which are linked to curriculum levels 6–8:[129]

a. Level 1 (Year 11 / fifth form) replaced School Certificate in 2002 (broadly GCSE).

b. Level 2 (Year 12 / sixth form) was introduced in 2003.

c. Level 3 (Year 13 / seventh form) replaced university bursaries in 2004 (broadly A Level).

The National Qualifications Framework[bb] provides a comprehensive qualifications framework encompassing senior secondary education, tertiary education (including university level) and industry training. It, too, is based on eight standards of performance ranging from National Certificates to National Diplomas and degrees. Level 1 is equivalent to Year 11 or Form 5 in school; National Diplomas and degrees are generally at levels 6–7, with postgraduate degree learning at Level 8. As learners attain outcomes, they receive credit towards qualifications registered in a Record of Learning. Achievement of sufficient credits at specified levels leads to the award of a qualification.

In Poland, the reforms to the assessment system introduced from 2002 were designed to ensure comparability between qualifications. Establishing uniform and detailed attainment standards was seen as necessary to ensure objective, standardised external assessment, with administration the responsibility of Regional Examination Boards.[130]

Through the Basic Education Comprehensive Assessment Project, Ghana developed the foundations of a system of standards for use in assessment. It includes the School Education Assessment which tests for minimum levels of performance required of students for progression. Minimum competency was set at 35% (i.e. 10% above the chance score of 25%) and proficiency was set at 55%, which educators considered equipped the student to work at the next level[cc] in school.[131]

[aa] The Language strand Listening, Reading and Viewing, for example, has sets of indicators for processes and strategies to enable teachers to make a rounded judgement. Among the Level 4 indicators is 'Integrates sources of information and prior knowledge confidently to make sense of increasingly varied and complex texts'. In order to demonstrate attainment of Level 8, students must be able to show they can 'integrate(s) sources of information and prior knowledge *purposefully*, confidently and *precisely* to make sense of increasingly varied and complex texts.' (More details in Annex D.)
[bb] Administered by the New Zealand Qualifications Authority.
[cc] that is, grade/class.

8 Pedagogy: What part do teachers' capabilities play in the design and implementation of changes to the curriculum and assessment?

What can education systems ask of teachers?

Improving and effective systems start from a sound understanding of the knowledge and skills of their teachers. These systems ensure that the design and implementation of curriculum and assessment are matched to teachers' capabilities. However, curriculum and assessment policies include scope for further development and challenge as teachers' capabilities (and those of the related workforce) increase.

Where teacher numbers and capacity are low, capacity to undertake policy development and implementation also tends to be limited and the administrative/operational infrastructure weak. The priorities for these systems are:

a. improving literacy and numeracy

b. making sure the curriculum is taught accurately

c. monitoring to make sure teachers are giving the time required to teaching, providing textbooks and notes for teachers

d. frequent student assessments to check that lesson objectives were being met.[132]

As teachers, headteachers, policy-makers and administrators become more skilled, the demands of the curriculum and assessment can become more complex. Schools become more independent; there is increased self-evaluation and greater flexibility to innovate in curriculum design within broad frameworks. Consistency is guaranteed through detailed description and exemplification of standards as well as quality assurance and moderation of assessments.

All education systems, whether high-performing or improving, require particular knowledge and skills of their teachers in order to achieve the aims and objectives of their curriculum and assessment policies. These may be implied or stated explicitly and include:

a. knowledge and understanding of the content of the subjects they teach, together with an increasing range of teaching methods

b. building relationships with their students so that they learn

c. designing programmes of learning that students regard as relevant and related to their own experience

d. greater emphasis on critical and analytical thinking

e. emphasis on teaching styles that encourage student participation and problem-solving[dd] rather than rote learning

f. enabling students to be independent learners.[133]

As systems try to raise the attainment of all students to even higher levels, demands on teachers' professional skills increase. They need to:

a. be aware of their own teaching strengths, how to use existing strengths and widen their repertoire of teaching styles

b. use evidence from research, thinking about their own teaching and discussions with colleagues to improve teaching and learning strategies

c. draw on the curriculum framework to design learning and teaching programmes that respond to the needs and capabilities of students, making connections to their prior learning and experience

d. create a supportive learning environment for all pupils, including the gifted and those with special needs

e. be able to adjust classroom organisation and groupings in order to use different teaching strategies

f. be able to select appropriately, not just from textbooks, but from a wide range of other materials and technologies (e.g. ICT for interactive learning)

g. extend learning opportunities by providing experiences out of school, including in the community and in workplaces

h. be able to carry out both formal and informal ongoing assessment and provide feedback, to enable students to improve their performance

i. use a range of assessment methods and data sources to obtain a rounded picture of students' strengths and weaknesses.

[dd] that is, to become a facilitator, provider of resources, adviser and assessor.

Table 1 below describes what teaching and assessment might look like in the classroom[ee] when practised by progressively more skilled teachers.[134]

Level	Classroom interaction	Assessment
1	**Teacher**: presents content in well-organised, correct and well-sequenced manner, based on well-designed lesson plan. Provides adequate notes. Uses textbooks effectively. Engages learners with questions. **Student**: stays attentive and engaged. Responds to and initiates questions.	Written tests are given that cover topics adequately. While most questions are of the recall type, some require higher-order thinking. Tests are marked and returned promptly.
2	**Teacher**: uses textbooks along with other resources. Engages students with questions that encourage in-depth thinking. **Student**: uses additional (to textbook) sources of information in compiling notes. Engages in meaningful group work. On own initiative, offers a contribution to the lesson.	Written tests include at least 50% of questions that require comprehension, application and analysis. Where applicable, some questions are based on practical work.
3	**Teacher**: probes students' prior knowledge and learning. Structures learning activities along lines of relevant knowledge, knowledge construction and problem solving techniques. **Student**: engages mind on learning activities. Makes own notes on the concepts learnt from doing these activities.	Written tests include questions based on seen or unseen guided discovery type activities. Assessment is based on more than written tests. Other forms of assessment might include reports on activities undertaken, project work, reports on extra reading assignments.
4	**Student**: takes major responsibility for own learning; partakes in the planning and assessment of own learning. Undertakes long-term projects (if possible community based.). **Teacher**: facilitates students as they design and undertake long-term investigations and projects. Assists students to weigh up the merits of different theories and knowledge.	Performances on open investigations are included in the final assessment. Students create portfolios to represent their best work.
Note: Four starting points for classroom interaction and assessment. Attempting to express how good practice may look in classrooms. Higher levels incorporate preceding levels' practices.		

[ee] Adapted from Table 16 in *World Bank Paper 128: Curricula, examinations, and assessment in secondary education in Sub-Saharan Africa* (2008) which, in turn adapted it from Rogan 2001: 'Towards a theory of curriculum implementation with particular reference to science education in developing countries', *International journal of science education*, 25,10, 1171-1204.

Changes need to take account of teachers' capabilities and plan for sustained investment in professional development

It takes a long time to improve student attainment through changes to the curriculum and assessment.

Table 2 is derived from McKinsey & Company's report on improving education systems: *How the world's most improved school systems keep getting better*,[ff] November 2010.[gg]

Table 2

Country	Poor to Fair (P-F)		Fair to Good (F-G)		Good to Great (G-Gr)		Great to Excellent: Countries on the way (G-E)		Move-ment	Total duration to date
	Dates	Duration	Dates	Duration	Dates	Duration	Dates	Duration		
Chile	2001-5	4	2006+	5						
Ghana	2003+	8								
Hong Kong			1983-1988	5	1988-1999	11	2000+	11	P-F/G	9
Poland			2000-2002	2	2003+	8			P-F	8
Singapore			1983-1987	4	1988-1998	10	1999+	12	F-E	27
Slovenia			1995-2005	10	2006+	5			F-G/Gr	13
South Korea					1983-1998	15	1999+	12	Gr-E	27

This report seems to suggest that moving attainment levels from 'Fair' or even 'Good' in the direction of 'Excellent' takes almost 30 years, and from 'Fair' towards 'Great' up to 15 years. Arguably the most challenging stage is the movement from 'Fair' to 'Good', though some countries, such as Poland, have achieved this relatively quickly.

Since teaching quality is arguably the most important determinant of student outcomes,[135] plans for implementing curriculum reforms need to give priority to improving teaching. This is particularly the case where widening access means a more diverse[136] student body.[hh] One of the most significant reasons for the lengthy timescales is the need to develop teacher capacity, taking realistic account of existing capability, setting reasonable challenges for improvement and making available appropriate support. The more effective systems build on existing capabilities rather than pursuing radical change.

[ff] Including exhibits 8, 9, 12, 15 and 17.
[gg] The most recent McKinsey report on improving education systems (*How the world's most improved school systems keep getting better*) classified school systems as poor, fair, good or great, drawing on outcomes of their participation in international assessments e.g. TIMSS, PISA, PIRLS and NAEP across a range of grades/levels/phases and subjects from 1995 to 2007 and using the methodology of Hanushek et al. to 'normalise' the assessment scales into a single universal scale and attribute systems to particular categories to the extent to which they deviated from the mean for a particular category.
[hh] The World Bank paper is written about Sub-Saharan Africa, but the principles are more generally applicable.

Some curriculum and assessment reforms require changes to practice that cannot be accomplished in one step, but incrementally. This is most marked where teachers may have started from a low skill base. The Chilean Ministry of Education[137] is reported as having concluded, even as late as 2004, that most teachers were at a transitional stage between traditional teaching styles and more innovative approaches: although student/teacher relationships were better, teachers' practice still lacked 'a clear orientation towards specific learning goals'.

As the knowledge and skills of teachers increase, there is scope not just for a more innovative approach to the curriculum and assessment, but also for additional flexibility. In Poland, for instance, teachers are able to select their own teaching methodology.[13130] In Hong Kong teachers were encouraged to build their teaching skills from the foundation of existing strengths[139] and given extensive descriptions and examples of how this might look in practice. Similar detailed exemplification was available to teachers in New Zealand: for example, *the National standards: information for schools*, introducing the National Standards, relates them to existing effective literacy practice, including Ready to Read.

What monitoring and support do teachers need?

Monitoring and support includes supervision, advice and inspection, and the provision of guidance, exemplars, and textbooks.

The second McKinsey report on improving education systems[140] proposes support for improvement which is differentiated according to their level of performance. It shows that:

a. the initial priority is a focus on achieving a uniform minimum level of quality in terms of student access, what is taught, how it is taught and monitoring learning

b. there can be greater freedom for schools and teachers as their capability and capacity grow

c. the importance of recognising links with other parts of the education system, including quality assurance and professional development.

While Ghana's education system performance has improved, the McKinsey report argues that it has not moved beyond the 'Poor to Fair' classification. Ghana has revised its curriculum and promoted teaching designed to encourage active learning. However, in a survey of systems in sub-Saharan Africa, the World Bank identified a number of general system features, such as low allocation of teachers and absenteeism, which slowed improvement, and proposed the following:[141]

a. Ensuring that basic teaching materials were distributed to schools, that schools managed, maintained and organised the materials so that teachers had the opportunity to use them, and that teachers had the capability and motivation to use them

b. In order to move teachers from didactic mode to a more interactive way of teaching, and implement changes to curriculum and assessment, teachers would need more support, including:

i. Explanation of the reasons for change based on research and evidence

ii. Demonstrations of what the change meant in practice

iii. Materials exemplifying good practice in curriculum delivery

iv. Opportunities to experiment with activities exemplifying the change

v. Guidance, exemplification and other resources.

This type of support is available to schools and teachers in high-performing systems. In introducing curriculum reform at the start of the 21st century, Hong Kong[142] not only set out an implementation timetable, but also identified the ways in which this would be supported. Support included curriculum guidance, examples of the new approach in practice, textbooks, professional development programmes (including web-based, formal programmes, action learning, school-based curriculum development teams to provide on-site advice), development of library facilities and 'seed projects'. In Hong Kong[143] teachers were given the opportunity to participate in shaping curriculum implementation and their good practice was disseminated. (Through the 'seed projects' schools were encouraged to work with consultants and universities from 2001 on projects relating to learning and teaching strategies, the key learning areas, moral and civic education and school-based curriculum development with the outcomes disseminated to other schools. Dissemination was also supported through the Regional Education Offices and District Teacher Network.) An evaluation of lessons learnt from Hong Kong's curriculum reform concluded that:

a. teachers benefited from having time to experiment and clarify their understanding of the curriculum and check how it would work in their schools

b. teachers and schools can learn lessons from previous experiences of curriculum reform

c. with experience and professional development, even teachers resistant to change may amend their attitudes

d. policy-makers need to explain how curriculum change is an evolution from existing practice rather than a completely fresh start, so that schools can relate it to previous reforms and their own experience

e. curriculum reform needs to take account of schools' 'zones of proximal development' – i.e. their realistic scope to develop, either independently or with support.[144]

Other high-performing systems provide similar types of mechanisms to build expertise and shared knowledge:[145]

a. New Zealand provides detailed Achievement Objectives for each Essential Learning Area and National Standards for literacy and numeracy, as well as other support including curriculum workshops and the School Support Services.

b. The Netherlands provides guidance via the government-funded National Institute for Curriculum Development. The Institute develops intermediate targets and teaching guidelines for mathematics and Dutch. The National Teaching Materials Information Centre (part of the Institute) provides guidance so that schools can compare products.

c. Queensland (Australia) provides the Queensland Curriculum, Assessment and Reporting Framework, Essential Learnings, as well as guidelines covering whole-school intervention, the use of student data for teaching and learning, school curriculum planning at school/cross-phase/classroom levels, pedagogy, assessment, reporting, leadership and provision for students with disabilities.

9 How much autonomy do schools and teachers have in designing their curricula?

Autonomy in curriculum design is a feature of effective systems where teachers share a common understanding of the core elements of the curriculum and the associated standards developed over an extended period. The flexibility is limited by rules about instruction time, content coverage and standards of attainment expected of particular age groups. There are also accountability mechanisms such as inspection, school boards and publication of results.

Flexibilities often relate to:

a. the use of non-core time or choice of elective subjects. In Poland, the headteacher has discretion to decide how to use the flexible time in the curriculum. In Hong Kong, schools have been able to decide which elective subjects to offer in senior secondary schools.

b. design of programmes and selection of learning objectives for particular groups of students

c. allocation of instruction time within longer time-frames

d. the selection of textbooks.

In looking at curriculum design and implementation, New Zealand encouraged schools and teachers to build on their knowledge and experience, distinguishing between the

national curriculum framework – which is meant to give schools the flexibility to design a curriculum that is meaningful for students – and the school curriculum, which should allow teachers the professional scope to respond to the needs of their students.

10 What are the expectations of headteachers, parents and students?

Headteachers

Where more autonomy is delegated to schools, headteachers have a central role to play in the implementation of the curriculum and assessment, including:[146]

a. ensuring the curriculum is being delivered in accordance with government guidelines and the school's own programme

b. monitoring student progress and identifying areas of weakness

c. encouraging teachers to use data on the impact of their teaching methods on student performance

d. promoting and supporting self-evaluation to share learning among teachers, to work together to create new ideas and programmes, to systematise and transmit knowledge to others, to encourage and promote innovation.

Parents

High-performing and improving systems ensure that parents value education, understand how the curriculum and assessment operate (particularly when changes are being implemented) and are actively involved in students' learning. In Hong Kong, teachers were advised to deal with parents' potential concerns about the reductions in the extent of homework and formal testing regimes. In Sub-Saharan states,[147] where parents may need their children to work to contribute to the family income, it is important that they do not decide school is a poor use of time. Their decisions would be affected by problems which they thought affected their children's opportunity to learn, such as inappropriate use of teachers' time (e.g. on administration), lack of discipline or lack of teaching materials.

Students

Moving to a system where students are expected to be active learners places expectations on them. In some systems, such as Poland,[148] their engagement and behaviour are graded alongside attainment. There is an understanding that teachers will ensure students know what is expected of them. In Hong Kong, the responsibilities of students are set out in parallel with those of teachers. For example, the English Language Curriculum and Assessment Guide (for Secondary 4–6) requires students to:

a. set meaningful and realistic goals for their own learning in negotiation with the teacher

b. engage confidently in learning activities with teachers supporting their learning

c. reflect on their learning experiences with teachers providing feedback

d. monitor and evaluate their progress against set goals.[149]

11 Conclusions

Driven by the need to compete economically and to give their population wider and more equitable access to education, high-performing and improving education systems are engaged in a continuing process of reform of their curricula and assessment systems. They see more inclusive and longer access to education not just as good in itself, but also as a means of enabling students to make more effective contributions to the economy.

Although the detail may differ, the curricula share common features. They put considerable emphasis on literacy and numeracy. This may involve giving a major portion of learning time to literacy and numeracy in the first years of education, establishing standards (that is, expectations), carrying out monitoring and testing on entry to education and subsequently, and integrating literacy and numeracy into other subjects. Students are expected to study a broad range of subjects until the end of basic education (at around 14–16 years of age). These may start as learning areas (such as science) and become progressively more distinctive (separating into physics, biology and chemistry). Typically, the curricula will include mathematics, the national language, humanities, sciences, as well as one or more foreign languages and creative subjects. In high-performing systems, the national curricula are set out in frameworks which demonstrate continuity and progression, through increasingly difficult levels of subject knowledge and skills called variously 'standards', or 'learning objectives'. These standards describe what students will be able to do and understand at particular levels of performance. Standards may be related to age and benchmarked against international standards. This enables schools to construct their own programmes of study. Curricula and performance standards are generally, but not always, separate from syllabi, which prescribe the knowledge and skills to be assessed for specified qualifications.

The drive to widen access and contribute to the economy requires changes, not only to curriculum content, but also to the way the curriculum is taught and assessed. The introduction of cross-curricular themes and skills is a way of responding to wider issues, such as employability, citizenship and the environment. They have the potential to engage students by demonstrating the relevance of study. There is explicit attention to teaching students how to learn, not only to improve their short-term performance, but also to equip them for lifelong, independent learning. The changed curriculum and more diverse student body require skilled teachers, able to deploy a broad portfolio of teaching techniques.

Summative assessment, particularly examinations, continues to be important in marking end-of-stage achievement and giving access to further study and employment. The establishment of clear standards, linked to the curriculum, means that all – schools, students, parents and employers – know the levels of performance required. Diagnostic (formative) assessment has gained in significance as a tool to enable teachers (and students) to evaluate learning, adjusting teaching and learning plans in order to improve attainment.

Factors driving changes to the curriculum and assessment generally lead to changes in the length and structure of schooling, often extending instruction time and opening up opportunities to more of the student population. High-performing systems go further: aiming to ensure instruction time is used effectively and to expand learning beyond school time.

Lessons can be learnt from other systems, but policy-makers must recognise the importance of the differences deriving from culture and history. Not only teachers, but also parents and students may have pre-conceptions about appropriate curricula and assessment systems. The most effective systems also demonstrate that they have taken account of previous achievements in developing their reforms.

Systems also need to take account of their own circumstances, particularly the strength of the education infrastructure (such as availability of school places, funding and governance mechanisms) and the capabilities of their policy-makers, administrators and school workforce. In systems at the start of an improvement trajectory, there is a greater requirement for prescription and monitoring to ensure accurate and full curriculum delivery, as well as keeping track of the underlying factors affecting opportunity to learn. As schools and teachers develop greater competence, they can take on increased responsibility for constructing their curricula and assessing their students. Credibility is still dependent on external verification of standards.

Implementing change and building expertise is a long-term task. It requires an understanding of the complex nature of the development and implementation of the curriculum and assessment, detailed practical knowledge of the situation in schools and meticulous planning. Pilots can be used to test out approaches, evaluate capability and build understanding.

Even highly-effective education systems provide considerable – and detailed – support for schools and teachers, ranging from curriculum guidance to on-site advice. Where teachers are less skilled (and particularly where expansion of student numbers has put pressure on teacher recruitment), practical short-term support will include high-quality student textbooks. Medium- to longer-term support will include discussions of the changes, demonstrations and opportunities to experiment with new teaching styles.

Annex A (Chile)

Derived from P. Hepp and E. Laval (2003) *Improving literacy and numeracy in poor schools: the main challenge in developing countries*

The Ministry of Education in Chile identified features of effective schools in similar circumstances and provided strong pedagogical support in each subject. This was implemented through:

- Early reading routines for all children in first grade
- Support for students with learning difficulties
- Clear plans for subjects on yearly, monthly and weekly technical/delivery plans often laid out in detail for each class
- School admin monitors delivery of plans. Classroom observation to assist teachers pedagogically
- Learning resources chosen carefully and integrated into lesson plans
- Efficient use of teaching time: lectures well prepared, resources in place, no interruptions; this means students are familiar with a routine and spend less time understanding goals, organising themselves
- Ensuring members of the school community – including families – have a clear understanding of expected learning outcomes and are well informed throughout the year about students' progress
- Establishing school-wide teaching routines to achieve basic skills in all students: 15 minutes' daily silent reading or mental arithmetic; a daily story hour for young pupils; a weekly hour at the library; a monthly theme round which students read, write, investigate, discuss etc.

International research showed similar features, with the addition of:

- More understanding by all teachers of expected learning results at each level in terms of the national curriculum
- Better support with subject-related pedagogy
- Access to continuing training and participation in networks of teachers of their own subject.

Annex B (Hong Kong)

Derived from *Learning to learn – the way forward in curriculum* (2001)

Details of implementation of the curriculum reforms in Hong Kong, adopting a 'gradual approach' over ten years, showing the respective roles of government and schools:

Timescale	Implementation of reform
Short term (2001/02 to 2005/06)	Government: • Curriculum guides; teacher/principal development programmes; on-site school-based support. (Curriculum guides for KLAs and individual subjects to be issued from 2002.) • Partnership with schools/tertiary institutions to conduct 'seed' projects to generate and disseminate successful experiences. • Conducts review by end of short-term phase to take stock of progress/consolidate successful experiences. Schools: • Different schools have different starting points. Each school to review its own position and formulate its own curriculum development plan according to its readiness and circumstances. • Baseline: promote learning through four key tasks (moral and civic education; reading to learn; project learning and use of IT for interactive learning) and enhance learning/teaching in KLAs including strengthening critical thinking, creativity and comm. Skills in all KLAs. • Schools that are ready: begin developing school-based curricula. Start on a small scale.
Medium term (2006/07 to 2010/11)	Government: • Consolidation and systematic dissemination of accumulated experience from short-term phase to help schools develop school-based curricula and improve learning/teaching strategies. • Continues tasks from short term, improves plans and actions based on 2005/06 review. Schools: • Build on strengths and experiences from short-term phase. Based on central curriculum framework, begin next stage of schools' curriculum development plans – i.e. development of school-based curricula. Improve teaching/learning strategies further.
Long term (Beyond 2011)	Government: • Continues to update/improve curriculum framework according to the needs of society and students. • Partnership with schools/others to generate/disseminate successful experiences. Schools: • Use effective teaching and learning strategies. • Develop school-based curricula that suit needs of students, based on central curriculum framework.

Annex C (Ghana)

Ghana: Curriculum and Education Structures: derived from the *Republic of Ghana's Report on the development of education in Ghana* (September 2008)

Changes were designed to enhance the interest and involvement of students to improve retention and completion rates. See table on following page.

Quality

- National Education Assessment (NEA) is an indicator of Ghana's education quality 'at the basic level':
  - The minimum level of competency is a score of 35%, proficiency 55%.
  - NEA provides performance data that can be compared across districts and regions.
- School Education Assessment (SEA) is intended as a school-level diagnostic tool: multiple choice and constructed response (i.e. written responses) examinations in mathematics and English. It is not intended for comparison across schools/regions, but to highlight areas of curriculum to be taught in depth; it is tied to specific test items, linked to core objectives in curriculum. It can be used to:
  - inform teachers and educators in schools where they need to make improvements in teaching
  - enable circuit supervisors to provide parents with information through School Performance Appraisal Meetings.[150]

Curriculum	
Kindergarten: taught through activities with concrete activities. Main Ghanaian language of the area.	
	Six areas of learning: language and literature (language development); creative activities (drawing and writing); mathematics (number work); environmental studies; movement and drama (music and dance); physical development (PE).
Primary: emphasis on literacy, numeracy and problem-solving (plus laying foundations for future, citizenship, learning skills).	
Lower Primary	Ghanaian language; English language skills; basic mathematical skills; natural science. Music/dance, PE and creative arts (arts and crafts) taught practically and demonstratively. P1–P3: 156 teaching periods per class per year i.e. three per week allocated to learning reading.
Upper Primary	Ghanaian language; English language skills; basic mathematical skills; integrated science. Music/dance, PE and creative arts (arts and crafts) taught practically and demonstratively.
Junior High: Students discover skills etc, prepare for further academic work and acquisition of technical and vocational skills at senior high school.	
	Ghanaian language; English language; mathematics; social studies; integrated science (including agricultural science), technical, vocational education and training; ICT; French; guidance and counselling.
Senior High: Education provided for four years at Senior High Schools, Technical/Vocational Institutes, and through apprenticeship schemes.	
Senior High Schools	Options: Technical/Vocational; Agriculture; General Programmes (arts or science). Core: English language; mathematics; integrated science; social studies; ICT (general tools, word processing, spreadsheet packages, internet).
Complementary Basic Education: structured learning outside formal school system; learner-centred, skill-based and accelerated functional literacy curriculums. Can be used as catch-up so children can access mainstream education.	
Environment: for children aged 8–17; classes generally no more than 25 ('small'); instructors from community and should be able to read and write in local language/mother tongue; flexible timetable; no more than 3 hours of classes per day; teacher-pupil relationship 'friendly and cordial'.	Curriculum: core areas numeracy, literacy and life skills (problem-solving); skill-oriented based on needs/values of community; use phonic/syllabic methods; use local language/mother tongue as medium of instruction; participatory/interactive teaching/learning methods; child-centred; continuous assessment of learning achievement. Literacy cycle of 9 months qualifies learner for admission to primary school. 1:1 ratio pupils/textbooks. Free access to reading materials and books.

Annex D (New Zealand)

New Zealand: Curriculum and Assessment

Introduction

The revised ***New Zealand curriculum for English-medium teaching and learning in Years 1–13***, along with a parallel document for Maori-medium schools, was published in 2007, following a review in 2000/02, extensive development work, consultation and publication of a draft in 2006.

Purpose and content

It provided an overview of the philosophy and content of the revised curriculum, outlining roles and expectations. In particular, it:

- explained the **purpose of the document** i.e. to provide guidance to schools in reviewing their curricula
- set out the overall v**ision (i.e. aim) and principles** of the revised framework
- identified the essential **'Learning Areas'** i.e. English, the arts, health and PE, learning languages, mathematics and statistics, science, social sciences, technology. While these were presented as distinct, in planning their own curricula schools had the flexibility to link them. Some of the learning areas were designed to provide the basis for specialisation later on. Social sciences (levels 1–5) provide the foundation for specialisation at levels 6–8, where there are separate achievement objectives for social studies, economics, geography and history. (Schools teaching years 1–13 must use the Learning Area Statements and Achievement Objectives. However, those teaching years 11–13 have more flexibility and can also draw on Teaching and Learning Guidelines, as well as industry-approved and tertiary courses)
- explained that:
    - in addition to subject content, students needed to be taught the specialist vocabulary; how to read, understand, evaluate and communicate about texts, ideas and concepts in subject-appropriate ways
    - students new to English needed 'explicit and extensive teaching of English vocabulary, word forms, sentence and text structures and language uses'
- f**or each learning area, adopted a uniform format** (of circa one page) to provide a 'Learning Area Statement' which explained the nature of the subject, the reason for studying it and how the Learning Area was structured. In the case of English, for instance, this comprised:

- What is English about?
  - Study, use, enjoyment of English language and literature – orally, visually, and in writing
  - Understanding, using, creating... increasing complexity at heart of English teaching/learning.
- Why study English?
  - Access to understanding, knowledge and skills to participate in social, cultural, political and economic life of New Zealand and the wider world
  - Understanding how language works and enables students to make appropriate language choices; critically deconstruct texts to understand power of language to enrich and shape their own and others' lives
  - It contributes to development of sense of identity
  - Fundamental to access to curriculum.
- How is the learning area structured?
  - Two strands, each including oral, written and visual forms of language – two modes:
    - Making meaning of ideas or info they receive (**listening, reading, viewing)**
    - Creating meaning for themselves or others **(speaking, writing, presenting)**
  - **Achievement objectives in each of the two strands** show progressions through which students move: develop knowledge, skills and understanding related to:
    - Text purposes and audiences
    - Ideas within language contexts
    - Language features that enhance texts
    - Structure and organisation of texts
- Achievement objectives are structured to make and create meaning at each level. As students progress, they engage with increasingly sophisticated tasks and texts at increasing depth.

- summarised evidence about **effective pedagogy** and explained the critical elements

- advised schools how to undertake **curriculum review**, building on existing good practice and meeting requirements relating to coverage of the essential learning areas, principles, values and key competencies. It was recommended that schools use the Learning Area Statements rather than Achievement Objectives to develop programmes of learning, selecting Achievement Objectives to match the programme subsequently

- explained that **achievement objectives** set out the learning processes, knowledge and skills relative to eight levels of learning. In planning, the priority for schools is to provide statements of learning expectations that teachers, students and parents can recognise and use; that schools can show what students are to learn and how it will be achieved building on existing learning; that coverage of fragmented Achievement Objectives is less important than each student's long-term success

- described the purpose of assessment (i.e. to improve teaching and learning) and the consequent responsibility of teachers to consider how to assess effectively; the uses of assessment information at student and school level; characteristics of effective assessment. 'Analysis and interpretation often take place in the mind of the teacher, who then uses the insights gained to shape their actions as they continue to work with their students'

- set out the **responsibilities of the various players**, including the Boards of Trustees

- showed how the Education Act 1989 and subsequent amendments had been used to construct the curriculum and assessment arrangements and guide their implementation, as shown below.

<table>
<tr><th colspan="4">The Education Act 1989 and amendments (i.e. continuity)</th></tr>
<tr><td colspan="4">National Education Guidelines</td></tr>
<tr><td rowspan="5">National Education Goals i.e. desirable achievements and policy objectives</td><td>Foundation Curriculum Policy Statements i.e. statements of policy re teaching, learning, assessment.</td><td>National Curriculum Statements i.e. statements specifying knowledge, understanding, skills to be learned by students.</td><td rowspan="5">National Administration Guidelines i.e. directions to boards of trustees mainly re management, planning and reporting</td></tr>
<tr><td colspan="2">The New Zealand Curriculum</td></tr>
<tr><td>Principles</td><td>Learning Area Statements</td></tr>
<tr><td>Values</td><td>Achievement Objectives</td></tr>
<tr><td>Key Competencies</td><td></td></tr>
</table>

Achievement Objectives

Achievement Objectives are grouped by **Essential Learning Areas**, broken down, where appropriate (e.g. for the Arts into Dance, Drama, Music and Visual Arts). Language is disaggregated into Listening, Reading and Viewing and Speaking, Writing and Presenting. Mathematics and Statistics is disaggregated into Number and Algebra, Geometry & Measurement, and Statistics.

The structure of the Objectives differs according to the area, but in **each case they are described in terms of what the students can do and, therefore, the evidence teachers can look for**. Listening, Reading and Viewing is sub-divided into Processes and strategies, Purposes and audiences, Ideas, Language features and Structure. For each of these sub-divisions, there is a brief description of what students will be able to do, followed by further detail in the form of indicators.

As with the National Standards (see below), the Objectives show how students' capabilities both broaden and deepen.

Listening, Reading and Viewing: Processes and Strategies	
Level 4: Students will: Integrate sources of information, processes, and strategies confidently to identify, form and express ideas.	Level 8: Students will: Integrate sources of information, processes, and strategies confidently, and precisely to identify, form, and express increasingly sophisticated ideas.
Indicators: • Selects and reads texts for personal enjoyment and fulfilment; • Recognises and understands the connections between oral, written and visual language; • Integrates sources of information and prior knowledge confidently to make sense of increasingly varied and complex texts; • Selects and uses appropriate processing and comprehension strategies with increasing understanding and confidence; • Thinks critically about texts with increasing understanding and confidence; • Monitors, self-evaluates, describes progress and articulates learning with confidence.	Indicators: • Selects and reads texts for personal enjoyment and fulfilment; • Recognises, understands and **appreciates** the connections between oral, written and visual language; • Integrates sources of information and prior knowledge **purposefully**, confidently and **precisely** to make sense of increasingly varied and complex texts; • Selects and uses appropriate processing and comprehension strategies with confidence and **discrimination**; • Thinks critically about texts with understanding and confidence; • Monitors, self-evaluates and describes progress, articulating learning with confidence.

National Standards

Notwithstanding New Zealand's achievements in international benchmarking tests, in response to concerns that almost 20% of young people were leaving school with inadequate literacy and numeracy skills,[152] the National Standards were launched in 2009 and came into effect in 2010. They are designed to focus on the attainment of literacy and numeracy skills necessary to enable students to access the NZ National Curriculum. They set expectations for student attainment in reading, writing and mathematics in Years 1–8. Just as the NC document identified the subject-specific techniques required, the National Standards (NS) are designed to make explicit the literacy and numeracy demands of the entire curriculum so literacy and numeracy can be integrated with the teaching of subject-specific curriculum content. The Standards documents include considerable professional development for teachers.

For instance, the National Reading and Writing Standards include the following:

- Part 1 introduces the NS, relates them to existing effective literacy practice; Part 2 presents information that will be part of professional learning materials including the theoretical basis; unpacks the standards relating them to reading standards and showing how they relate to Ready to Read; Part 3 – how standards and examples laid out then presents actual standards.
- Standards:
    - Diagrammatic explanation of how standards are put together, including analysis of verbs in the description e.g. in the Reading Standard: 'By the end of year 6, students will read...' ('Read' is explained including progression from decoding to thinking about meaning)
    - A section 'Key Characteristics of Texts that Students Read at this Level'. Characteristics include content, themes and ideas, structure, language, literary features. Notes texts become more complex from year to year
    - This is followed by an example illustrating the Reading Standards where there is an explanation of the learning context where student is meeting demands; extracts from text to show how it relates to curriculum task and reading demands; examples of skills, knowledge and strategies student uses. Includes pictures of actual student work
    - The Standards are written so that it is possible to see how students' skills both broaden and deepen, for example:
        - By the end of Year 4: locate and evaluate information and ideas/within texts
        - By the end of Years 5 and 6: locate, evaluate and integrate information and ideas/within and across a small range of texts

    - By the end of Years 7 and 8: locate, evaluate and synthesise information and ideas/within and across a range of texts

- There are reading standards and writing standards.

Formative and summative assessment

In New Zealand, formative and summative assessments are particularly closely linked because of the pivotal role played in both by teachers. Both formative and summative assessments are based on teachers' professional judgements. Primacy is given to assessment for learning. Assessment is based on standards, rather than norms.[153] The key principles include:[154]

- The student is the central focus.
- The curriculum underpins assessment.
- Improvement relies on teachers' professional assessment capability.
- A range of evidence from multiple sources is more likely to give an accurate assessment.
- Effective assessment relies on good-quality interactions and relationships.

In primary schools, teachers make 'on balance' judgements using information from a range of sources. While there are no national tests as such, teachers' judgements are informed by guidance and exemplification relating to expected standards, such as the Achievement Objectives for each Learning Area and the National Standards for Literacy and Numeracy (and the Maori equivalent: Nga Whanaketanga rumaki Maori).

There is similar guidance available for secondary teachers, including exemplification.

Statutory assessment/standardised assessment is carried out:[155]

- To assess pupils within 5–6 weeks of first starting primary school. This is not compulsory, but has been carried out since 1997 using standardised tests within 5–6 weeks of entering school
- To monitor educational attainment nationally in order to inform policy: a 3% sample of children (3000 students/260 schools) in Year 4 (8–9 years) and Year 8 (12–13 years) are involved in the National Educational Monitoring Project each year. All curriculum areas are covered in a 4-year cycle. The sample is selected randomly. Two experienced teachers visit each school and, during a week, assess 12 students, each of whom takes part in four 1-hour assessments
- In the secondary phase, students are assessed for the National Certificate of Educational Achievement (NCEA). NCEA is a credit-based qualification recognised by tertiary institutions and employers. Students generally take Level 1 at the end of compulsory education (aged

15–16) and Level 3 at the end of post-compulsory secondary education (aged 17–18). The NCEA Standards are aligned to curriculum levels 6–8. Students' performance is evaluated against specific criteria. Each standard has a defined credit value. Consequently, formal assessments – both internal and external – enable the award of credits towards completion of NCEA Level 1–3 qualifications.[156]

Ensuring the quality and credibility of assessments

The Education Review Office is responsible for evaluating the assessment capability of individual schools. The New Zealand Qualifications Authority sets standards for secondary school qualifications; manages the external assessment of secondary school students; moderates the quality of internal assessment; maintains students' electronic Record of Achievement; produces reports on each school's capability to assess against NCEA standards and monitors student results over time to inform improvements to policy and practice.

Annex E (Hong Kong)

Hong Kong: Curriculum and Assessment

Introduction

Learning to learn – the way forward in curriculum development, the report from Hong Kong's Curriculum Development Council, was published in 2001 following a review of the school curriculum that commenced in 1999. (The review had been followed by consultation on the draft curriculum framework in 2000.) The report outlined short-term (2001/02 to 2005/06), medium-term (2006/07 to 2010/11) and long-term plans (beyond 2011).

Purpose and content

It provided an overview of the philosophy and content of the revised curriculum, outlining roles and expectations, as well as the ways in which teachers would be supported in implementing the curriculum and associated assessment. In particular, it:

- stressed continuity, locating the curriculum changes firmly within the **local context, including existing professional strengths and experiences derived from previous implementation** of curriculum changes
- set out the **guiding principles** for successful implementation of the changes, focusing on student-centred learning; presenting curriculum development and change as a continuous process necessary to achieve improvement
- explained the **strategies for development**, with an emphasis on **gradualism and capacity-building**, including guidance on the tasks to be undertaken by schools, particularly in the short term and the respective roles of government and schools. The guidance on short-term activities for schools was designed to free up time (e.g. by re-engineering work such as shifting administrative tasks away from teachers and trimming the curriculum); focus on ensuring that students had the basic competencies in Chinese, English and numeracy as enabling tools for learning; as well as giving priority to the development of critical thinking, creativity and communication skills to strengthen students' capacity to become independent learners
- introduced the 'Four Key Tasks' **to support effective learning and teaching**: moral and civic education; reading to learn (including strategies to learn more effectively); project learning (to develop generic skills and build knowledge) and using information technology (for interactive learning)
- set out the overall **vision (i.e. aim) and principles** of the revised framework, including the provision of essential learning experiences for whole-person development, helping students to learn how to learn and setting out a coherent and flexible framework capable of adaptation to the different needs of schools and in the light of change

- explained the interaction between the three **components of the curriculum framework: Key Learning Areas (KLAs), Generic Skills,**[ii] **Values and Attitudes**[iii] with existing subjects grouped into eight KLAs comprising: Chinese Language Education; English Language Education; Maths Education; Personal, Social and Humanities Education; Science Education; Technology Education; Arts Education; and Physical Education. Schools were to be required to give students a broad and balanced curriculum in primary and secondary phases by making available subjects from within each KLA. However, these groupings were not meant to lead to out-of-field teaching: the Arts KLA, for instance, notes that there is no intention of asking arts teachers to teach subjects in which they are not 'specialised'

- outlined, for each of the **KLAs and General Studies for primary schools, priorities for action**, setting out the aim of the KLA ('Position'), objectives ('Direction') and CDC's expectations of students and teachers. For example, in the case of English Language Education:

Grade	Student	Teacher
P1–3	• Develops phonics skills and vocabulary-building skills.	• Develops learners' language skills through activities such as shared reading of big books and story-telling.
P4–6	• Has more opportunities for reading, writing, speaking and listening to English; • Develops dictionary and information skills; • Communicates effectively by using suitable grammar structures.	• Uses tasks and projects to facilitate the integrative use of language and development of dictionary and information skills; • Makes greater use of open-ended questions to stimulate thinking; • Facilitates grammar learning through a wide range of materials and activities.
S1–S3	• Develops creativity, critical thinking and cultural awareness; • Broadens their dictionary skills, such as using phonetic symbols to pronounce unfamiliar words; • Develops the positive language learning attitudes of cooperating, perseverance and not being afraid to make mistakes.	• Makes greater use of imaginative/literary texts to develop learners' creativity, critical thinking and cultural awareness; • Uses language tasks and projects to further enhance learners' dictionary skills and encourages collaboration and risk taking in language learning.
S4 and above	• Communicates effectively in a wide range of situations; • Actively seeks opportunities for self-access and life-wide learning.	• Engages learners in purposeful tasks and projects that allow them to learn and use English in natural and realistic settings; • Negotiates the learning objectives, materials and activities with learners, and encourages them to seek and create opportunities to learn and use English; • Enables learners to practise self/peer-assessment.

[ii] For example, collaboration, communication, creativity, critical thinking, information technology, numeracy, problem-solving, self-management and study skills.
[iii] Values are principles underpinning conduct and decision-making; attitudes are the personal dispositions needed to perform a task well.

- clarified the areas where **schools have discretion**. While schools must adhere to CDC requirements in terms of learning time, learning targets and essential contents to ensure students receive their entitlement, they have flexibility about the way they organise curriculum contents, contexts and examples, learning and teaching strategies, pace of learning and teaching, homework, criteria and modes of assessment

- identified **areas for action in the first phase of implementation designed to improve learning, teaching and assessment**, noting they are based on 'authentic and practical experiences within the Hong Kong context, as well as by local and international research'. The actions ranged from ones associated with school management, through learning and teaching strategies and partnerships with external organisations including:

    - emphasising that **school curriculum development** was an opportunity to work out a holistic, coherent curriculum using time, different learning environments and resources from a range of sources as they saw fit and giving examples of how schools might approach the task

    - promoting **collaborative lesson planning**

    - encouraging schools to see lesson time, other school time and school holidays as opportunities to learn

    - explaining the principles **underpinning effective learning and teaching strategies**

    - distinguishing between **assessment for learning and assessment for selection**. Importance both of the process (e.g. independent learning, reflection) and products (e.g. knowledge, problem-solving capacities). Promoting use of most appropriate assessment tool. Undertaking to provide evidence-based quality criteria in line with curriculum framework to help teachers judge performance/progress of students in relation to learning targets; work with HKEA to develop combined curriculum and assessment guides so the scope/modes of assessment consistent with learning objectives and contents. Schools can use Student Assessment Programme of Basic Competency Assessment (English, Maths, Chinese) at P1 to S3. Tool to diagnose students' weaknesses and strengths as one basis for improving learning and teaching

    - recommending that schools cater for learner differences – i.e. **personalised learning**

    - advising on strategies for smoothing transition between different phases of education (i.e. kindergarten, primary and secondary)

    - **promoting collaboration and communication with parents** about the purposes of assessment and the value of a diverse range of teaching and learning styles

- described the measures and resources available to support schools and teachers including curriculum and assessment guidance.

The Curriculum and Assessment, including the Guides

Introduction

A Basic Education Curriculum Guide was published, which expanded on the material in *Learning to Learn*, followed by guidance on the curriculum and assessment for KLAs. Guidance spanned Primary 1 – Secondary 3 and Secondary 4 – 6 (i.e. Years 1–9 or ages 6–14 and Years 10–12 or ages 15–17 respectively) reflecting the New Academic Structure leading to the Hong Kong Diploma of Secondary Education. These formed part of a suite of publications comprising:

- 2001: Exemplars of curriculum development in schools, available alongside *Learning to learn*
- 2002: Basic Education Curriculum Guide – Building on Strengths
- 2002: Key Learning Area Curriculum Guides: Chinese Language Education; English Language Education; Maths Education; Technical Education; Science Education; Personal, Social and Humanities Education; Arts Education; PE
- Subject Curriculum Guides
- Learning and Teaching Resources: Teaching Kits, videos, tapes, CD-ROMS, booklets, leaflets, reports.

Accessibility is enhanced by:

- a uniform set of messages throughout the guides (e.g. re actions at the three stages of implementation, approaches to pedagogy and assessment)
- relating the curriculum guides closely to the dimensions, learning targets and objectives set out in the CDC syllabi published in the 1990s, demonstrating continuity. The most marked difference is not in the content, but in the emphasis on changed approaches to teaching and assessment (i.e. task/experience-focused learning and formative assessment).

Taking the English Language curriculum as an example, the **curriculum framework** comprises:

- aims – in this case relating to opportunities to learn about other cultures; for personal and intellectual development and enhance employment opportunities, since much material is in the English medium
- (subject-related) target i.e. for learners to develop an ever-improving capability to use English (e.g. to think and communicate). English Language is the core subject with English Literature as an extended and optional subject

- the curriculum organised into ‘strands’ (referred to in the syllabi as ‘dimensions’) with learning objectives as focuses:

English Language (Core subject KS1–4)	
Strands (dimensions): Language learning for the purpose of developing learners’:	• Ability to establish and maintain relationships to exchange ideas and information; and to get things done (Interpersonal) • Ability to provide or find out, interpret and use information; to explore, express and apply ideas; and to solve problems (Knowledge) • Ability to respond and give expression to real and imaginative experience (as presented largely through literary or creative texts (Experience)
Learning objectives (cf syllabi) – focuses:	• Forms and functions (vocabulary, text-types, grammar items and structures, communicative functions) • Language skills (listening, speaking, reading, writing) • Language development strategies (e.g. thinking skills, information skills, skills of planning, managing and evaluating one’s own learning) cf 9 Generic Skills • Attitudes (e.g. confidence in using English, sensitivity towards language use in the process of communication, respect for different cultures).

The learning targets consolidate previous learning, adding depth and breadth (**see emboldened text**):

English Language Learning Targets		
English Language Learning Targets for KS1 (P1–3): By Strand/Dimension (Examples of related Bands of Learning in blue)		
Interpersonal	**Knowledge**	**Experience**
a. To establish and maintain relationships and routines in carrying out classroom activities. [B1. Learners are able to participate in classroom routines; to interact with teacher and classmates in supportive and structured classroom situations and activities; to exchange greetings using appropriate expressions; and to exchange simple information about themselves, their families and friends.]	f. To recognise some obvious features of the English language in simple spoken and written texts such as the direction of writing in English, the characteristics of an alphabetic script and the sound patterns of English; and apply this awareness to one’s initial learning and use of the language.	b. To respond to characters and events in simple imaginative and other narrative texts through oral, written and performative means such as: making predictions; making simple evaluative remarks; drawing pictures, making simple models or objects; creating captions; describing one’s related experiences; participating in the telling of stories.

English Language Learning Targets		
English Language Learning Targets for KS2 (P4–6): By Strand/Dimension		
Interpersonal	**Knowledge**	**Experience**
a. To establish and maintain relationships and routines in **school and other familiar situations**. [B3: Learners are able to sustain relationships in the classroom and other familiar settings using simple means of expression; to exchange information on a wider range of familiar topics; to participate in making simple decisions to get things done, including through simulation and role-play activities; and to make and respond to requests in structured situations.]	f. **To understand some aspects of how the English language works, including how grammatical features contribute to meaning and how simple texts are organised**; and apply this **understanding** to one's learning and use of the language.	b. To respond to characters and events in simple imaginative and other narrative texts through oral, written and performative means such as: making predictions; **making inferences**; making evaluative **comments**; **describing one's feelings towards characters and events; relating to** one's experiences; **imagining oneself to be a character in the story and describing one's feelings and reactions; participating in dramatic activities**.

English Language Learning Targets		
English Language Learning Targets for KS3 (S1–3): By Strand/Dimension		
Interpersonal	**Knowledge**	**Experience**
a. To establish and maintain relationships and routines in school and **community situations**. [B6: Learners are able to establish and maintain relationships in the school setting and in familiar settings in the community; to sustain exchanges with others, including the exchange of points of view in a straightforward manner, using appropriate degrees of formality; to participate in planning, organising and carrying out events and activities including real situations; and to make and respond to more complex requests and instructions.]	f. To understand some aspects of how the English language works **in relation to basic differences between formal and informal contexts** and how **different** texts are organised **and expressed**; and apply this understanding to one's learning and use of the language.	b. To respond to characters, events and **issues** in imaginative and other narrative texts through oral, written and performative means such as: making predictions and inferences; making evaluative comments; **explaining** one's feelings towards characters and events; **expressing one's reactions to issues**; relating to one's experiences; **putting oneself in the imaginary roles and situations in the story**; participating in dramatic **presentations**.

English Language Learning Targets		
English Language Learning Targets for KS4 (S4–5): By Strand/Dimension		
Interpersonal	**Knowledge**	**Experience**
a. To establish and maintain relationships and routines in school and community and **work situations**. [B8: Learners are able to establish and develop relationships in a variety of contexts; to converse on a range of topics fluently; to participate effectively in working with others; and to provide and obtain information and services in a range of real and simulated situations.]	f. To understand how the English language works in **a wide range of contexts** and how **more complex** texts are organised and expressed; and apply this understanding to one's learning and use of the language.	b. To respond to characters, events, issues **and themes** in imaginative and other narrative texts through oral, written and performative means such as: making predictions and inferences; **analysing the actions and motivations of characters and the significance of events**; relating to one's experiences; putting oneself in the imaginary roles and situations in the story; participating in dramatic presentations **and reflecting on the way in which authors use language to create effects**.

- In addition to learning targets for English Language and Literature, there are similar key stage-related descriptions (and subject-specific exemplars) of expected achievements for:
    - Generic skills (i.e. Communication Skills; Creativity (not by key stage); Critical Thinking; Information Technology; Numeracy; Problem-solving; Self-management (not by KS); Study skills);
    - Values and attitudes with exemplars of expected implementation by KS, e.g. KS4 includes
      '2. Motivate themselves by developing endurance and tolerance in the face of hardships (such as when carrying out challenging language learning tasks or projects)'.

Syllabi

- While the syllabi set out the learning objectives, they also contain material that offers much wider guidance and is recognisably related to the subsequent curriculum changes of 2002 onwards.

Learning Objectives

- The learning objectives remain those in the 1999 syllabus (in the case of English Language for Secondary 1–5). They describe explicitly what students learn and can do to achieve the learning targets of the particular key stage. They are not mapped onto the dimensions, but organised into:

- forms and functions: text-types, vocabulary, communicative functions, language items
- skills and strategies: listening, speaking, reading, writing, language development strategies.

- As with learning targets, they are aggregated, so that knowledge is built up over the course of study. For example:

	KS1	KS2	KS3	KS4
Text types	E.g. captions, messages, jokes, letters, short stories.	E.g. add poems, TV schedules, plays or dramatic episodes, poems.	E.g. add brochures, reports, formal letters	E.g. add editorials, feature articles
Language items	E.g. use the present continuous tense to describe an action taking place at the time of speaking.	E.g. use the present perfect tense to relate past events to the present.	E.g. use a variety of tenses, passive voice, reported speech, adverbs etc, to refer to events in the past, present and future and to the frequency with which things occur.	
Reading	Establish concepts about print. Construct meaning from text, e.g. work out the meaning of unknown words by recognising the base word within other words. Locate information and ideas, e.g. identify main ideas from a text with teacher support. Locate information and ideas, e.g. identify details that support the main idea.	Construct meaning from text, e.g. use visual clues, context and knowledge of the world to work out the meaning of an unknown word and a complete expression.	Understand, interpret and analyse different written texts e.g. differentiate fact from opinion.	• Understand, interpret and analyse different written texts, e.g. 1. follow and evaluate the development of a point of view or argument; 2. evaluate critically views and attitudes.

Bands of Performance

- The Bands of Performance relate closely to the later performance targets in the revised curriculum and remain valid – albeit they are 'not... obligatory'.

- In the case of English, they comprise two types:

  - Descriptions of eight levels of performance corresponding to the Dimensions. (Examples of the Bands have been inserted in blue alongside the Dimensions above);

    - More detailed descriptions of expected performance in relation to listening, speaking, reading and writing. Thus, progression in reading includes:
        - B1: Understanding short written directions and instructions
        - B4: Interpreting and using information presented in a range of text-types
        - B8: Acquiring, relating, synthesising and evaluating ideas and information.
- By reading the Bands of Performance across levels, it is possible to see how expected progression is defined and by looking across the Dimensions gives an overview of the subject.
- The Bands of Performance are presented as potentially subject to change. A 'hypothetical relationship' is shown between Bands and Key Stages:
    - KS1: 1, 2
    - KS2: 2–4
    - KS3: 3–6
    - KS4: 4–8.

The New Senior Secondary Curriculum (NSSC)[157]

The NSSC commenced in Secondary 4 in September 2009. Its aims were:

- To enable all students to receive six years of secondary education – making access to secondary education a broad-based entitlement – and laying the foundations for lifelong learning through the acquisition of broadly-based knowledge and capabilities
- To meet the changing economic needs of Hong Kong.

Its main features are:

- Irrespective of the pathways followed, all students take four core subjects: Chinese language; English language; Mathematics and Liberal studies.
- In addition, students take two or three elective subjects from three categories (and may take up to a maximum of eight subjects):
    - A: NSS elective subjects (e.g. Biology; Accounting and Financial Studies; Chinese History; ICT; Music; Tourism and Hospitality Studies)

    - B: Applied learning subjects (e.g. Design Studies; Business studies; Sports; Civil and Mechanical Engineering; Services Engineering)
    - Other language subjects (French, German, Hindi, Japanese, Spanish, Urdu).
- They are also expected to undertake other learning experiences (e.g. moral and civic education, aesthetic education, career-related experiences, physical education).
- The introduction of school-based assessment by subject teachers with marks awarded counting towards the results of public examinations (SBA moderated to ensure consistency of standards).
- Grading and reporting in accordance with standards:
    - Category A subjects are reported against five levels (with 5 the highest, and the option of attaining 5** and 5*) plus 'unclassified'
    - Category B subjects are reported against 'Attained' and 'Attained with Distinction'
    - Category C subjects, which are examined through Cambridge International Examinations AS level papers, are marked and graded by Cambridge International Examinations against grades A–E, with grade E lowest, plus 'ungraded'.
- To maintain comparability with HKALE, standards for Levels 4 and 5 of HKDSE were to equate to grades A–D of HKALE.[158] Since the intention is that the standards will remain constant – and will be monitored – percentages of students achieving particular levels in HKDSE may vary year on year.

Formative and summative assessment

The Syllabi (e.g. the English Syllabus of 1999) discussed assessment of learners in terms of performance against criteria rather than in comparison with their peers (norm referencing). While there was considerable emphasis on summative assessment (e.g. for grading learners' performance, determining which class to place students in and selection of students for further studies), assessment was also presented as formative and diagnostic, both in terms of students' strengths and weaknesses and also as a mechanism to evaluate teaching effectiveness.

Principles underpinning formative assessment included:

- task-based learning designed to demonstrate learner capability
- use of a range of tasks to cover the spectrum of learning targets
- use of multiple assessment criteria (i.e. Bands of Performance) as a mechanism for giving structured feedback to students

- discouraging teachers from using formal tests and assessment too frequently (e.g. once a week or month) and suggesting other assessment mechanisms such as observation, portfolios, discussions with learners and encouraging learners to assess their own learning.

The expansion of expectations about continuing education led to a change in formal, terminal examination arrangements. The primary Academic Aptitude Test was discontinued. Previously performance in the Hong Kong Certificate of Education Examination at the end of Secondary 5 determined whether students could progress to Secondary 6 and 7 to take the matriculation course leading to the Hong Kong Advanced Level Examinations, which determined entrance to university and other tertiary courses. This was superseded by the introduction of the Hong Kong Certificate of Secondary Education (see above).

Following introduction of the New Senior Secondary Curriculum, which began with the Form 4 students in the 2009/10 academic year, HKCEE and HKALE are being phased out (HKCEE final examinations in May 2010 and HKALE final examinations in May 2012). Instead, students will take the Hong Kong Diploma of Secondary Education at the end of Year 6, which will be the final year in school.

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