Lower secondary education: an international comparison

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1. INTRODUCTION

1.1 Purpose of Study

The overall aim of this study is to enhance our knowledge and understanding of current issues affecting lower secondary education by reviewing aspects of this level of education (structures, aims, organisation, curriculum and assessment) in the 16 countries of the International Review of Curriculum and Assessment Frameworks *Archive*.

When undertaking any kind of comparative study, consideration of the context in which the education system is set is of utmost importance. Lower secondary education provision in different cultural contexts is subject to a range of differing cultural influences. The varying nature of the 'ingredients' of lower secondary education inevitably leads to the end product being different in many ways. However, in the course of this study it has become clear that, whilst there are many significant differences between the countries, there are also common elements.

By indicating some of the differences between, and commonalities shared by, the countries, this study highlights many of the variables to be taken into account when drawing lessons from other education systems, as well as the extent to which we can learn from the experiences of other countries.

Throughout this report it is important to bear in mind the potential gap between the intention – what is determined by Ministries and governments – and the actual situation in schools. All countries may share some of the rhetoric, but the many variables that influence its interpretation often lead to a very different situation in practice.

For this reason during the preparation of the report an international seminar was held at which 10 of the 16 countries were represented[1]. In addition to the countries of the

[1] Canada, France, Germany, Japan, Netherlands, New Zealand, Singapore, Spain, Sweden and Switzerland

Archive, representatives were also invited from Hong Kong and the Republic of Ireland, as these countries may be included in the project at a later date. Participants were invited to give a short presentation on one of the five main themes that formed the framework of the seminar. The presentations were followed by discussions, which enabled all participants to explore the issues raised and exchange views on their own and other systems. The two-day seminar provided an opportunity to look beyond the intended curriculum and assessment frameworks to consider current practice and issues. Where possible, this report has drawn on discussions and commentary at this seminar.

1.2 Structure of Report

This report groups the many elements that influence lower secondary education into five main areas:

- structures of lower secondary education;
- goals of this phase of education and its role within the wider context of the education system;
- organisational characteristics;
- organisation, breadth and content of the curriculum and teaching and learning;
- assessment procedures.

Each section will present some of the differences and similarities between the systems, highlighting issues or problematic areas that have been identified by individual countries.

1.3 Definition of Terms

The terms used to describe each phase of education vary from country to country. The following terminology is used in this report. The first phase of compulsory education, referred to as 'primary', generally starts between the ages of five and seven and ends between 10 and 14. 'Lower secondary' is defined as the phase that immediately follows primary level education, in those countries where the two levels are distinct from each other. The most common age of transfer from lower secondary to the next stage of secondary education (referred to here as 'upper secondary') is between 14 and 16. Upper secondary education may fall outside the boundaries of compulsory education and generally caters for students up to the ages of 18 or 19.

Responsibilities for education in the five federal countries of the *Archive* (Australia, Canada, Germany, Switzerland and USA) are generally devolved to the level of state, province, territory or *Canton*. References to these countries may not necessarily reflect policy in all devolved regions of each of these countries.

2. THEORETICAL BASIS OF LOWER SECONDARY EDUCATION

This section highlights some key issues common to many countries included in the *Archive* that have recently been raised by educationalists

2.1 Aims of Secondary Education

It is important to consider the wider aims and principles that underlie an education system as a whole and the role which education plays in the socio-economic development of a country. The *Report of the International Commission on Education for the Twenty-first Century*, (Delors, 1996), outlines four 'pillars of learning' or important principles: 'learning to do', 'learning to know', 'learning to live together' and 'learning to be'. These principles place the moral and ethical side of education, including promoting self-respect and tolerance of others, alongside the academic and practical aspects of learning. In a critique of this UNESCO report, Watson (1999) questions the extent to which education systems can, in practice, pay equal attention to these four principles: "*under the pressures of economic globalisation and the need to be as competitive as possible in a global market, it is the liberal, humanistic and spiritual dimensions of education that are being squeezed out by skills training and academic subjects that are easily measured by test scores*." (Watson, 1999, p.11)

During the 20th century, secondary education in industrialised countries has undergone a transformation from a purely academic pursuit for the privileged few to universal provision. However, Hughes (1998) questions the extent to which this change of role has been accompanied by a redefinition of the aims of secondary education. He refers to three 'crises' that are suggested by Power (1997) to have faced, and are still facing, secondary education in many industrialised countries today: "*crisis of numbers…crisis of quality….crisis of legitimacy*" (Power (1997). Successful provision of secondary education, according to Hughes, requires a high quality education that is acceptable to all sections of the society concerned.

2.2 Function of Lower Secondary Education

Looking more specifically at the lower secondary phase of education, issues arise concerning its role. Does this stage of education have a particular function, or is it a "*crossroads in education for the whole sector*" or a "*link between primary education, vocational education, higher education and work*" (Hughes, 1998, p.4)? The tension between providing a broad curriculum and sound general education on the one hand, and encouraging specialisation on the other, is an important indicator of the potentially differing roles of lower secondary education. This ambiguity is reflected in lower secondary provision in many countries. Germany and the Netherlands are two countries that seem to be moving in opposite directions in this regard: the current move in Germany to increase opportunities to specialise at lower secondary level contrasts with the recently introduced universal curriculum for the first three years of lower secondary education in the Netherlands.

2.3 Transfer from Primary to Secondary Phase

Research carried out in England indicates that, although administrative and pastoral links between schools are generally well established and effective, transition from primary to secondary education is fraught with difficulties (Barber, 1999; Schagen and Kerr, 1999; Galton *et. al.*, 1999). The National Curriculum is designed to facilitate transition through both curricular continuity and the provision of records on student progress. However, research indicates that there is a lack of communication between primary and secondary institutions and teachers in England. Insufficient understanding at secondary level of what children have learnt and how they have been taught at primary level can lead to low expectations on the part of secondary school teachers. Students may be given unchallenging work, particularly where areas of the curriculum already studied at primary level are repeated. This leads to demotivation, which in turn affects progress.

This type of problem is not unique to England. Some countries are attempting to ensure a greater level of continuity between primary and secondary education by introducing a common curriculum throughout the two phases (for example New Zealand and Australia). Sweden goes one step further by having a single phase which includes both primary and lower secondary education (from age seven to age 16), thus eliminating some of the problems of transition.

Social adjustment is also an important issue when considering transition from primary to secondary levels, which generally coincides with adolescence and puberty. With specific reference to Canada, McCall (1998, p.2) suggests that the transfer from the

primary to secondary system "*is a major challenge for many adolescents who face an increased number of pressures and health/social problems*". He goes on to suggest that "*school organisational models such as middle schools, schools within schools or other supportive structures should be available to all students*" (McCall, 1998, p.2). Hughes (1998) suggests that the needs of young people at this stage include gaining maturity and independence. For this reason educational policy-makers and practitioners also have to consider the extent to which lower secondary education caters for the needs of young people and the challenges that face them.

2.4 Student Achievement

Barber (1999) implies that the years that immediately follow primary schooling in England may, in practice, be treated as the least important stage of education. He claims that at this stage students are more likely to be taught by substitute teachers, that teachers tend to focus their energies on the older examination classes and that the percentage of poor lessons in the 11 to 14 age group is higher. These factors, combined with what may be unsuitable or unchallenging teaching, and the failure on the part of students to make the connection between hard work at this stage and achievement later in their education, may explain the decline in performance that occurs in the first years of lower secondary education, particularly among the more able boys. Barber (1999, p.9) suggests that between a third and a half of students at this stage are either bored ('disappointed', 20 to 30 per cent) involved in truancy and poor behaviour ('disaffected', 10 to 15 per cent) or have given up altogether ('disappeared', two to five per cent). The underperformance of boys is a specific concern in some countries, for example New Zealand.

General achievement levels are affected by behaviour and discipline problems, as learning can be disrupted for a whole class by a minority of poorly behaved students. Problems of discipline and violence are being addressed in, for example, Canada and the Netherlands.

In Germany, the number of students (around 80,000, or just under nine per cent of lower secondary school leavers) leaving lower secondary education without certification is causing concern. However, these students must remain within the education system at least on a part-time basis until they are 18, longer than in most other countries, as they are required to enter the 'dual system' which provides both vocational training and general education.

2.5 Learning Foundations

The learning that takes place at the lower secondary level is based on the foundations laid during primary education. If these foundations are not sufficiently strong, students move up to secondary education with a very wide range of standards, even in basic skills such as literacy and numeracy. Barber (1999, p.3) refers to the middle years of schooling as a 'house built on sand'. The spectrum of abilities is widened rather than closed at secondary level, leaving increasingly more students to fall behind, referred to by Barber as a 'long tail of underperformance'. Similar concerns are raised in France, where students progress automatically through the primary phase and on to lower secondary education, many of them lacking in literacy and numeracy skills.

The key issues raised in this section that affect lower secondary education (ambiguity concerning the function of this phase, difficulties in terms of transition, continuity and student achievement and issues concerning the strength of foundations laid at primary level) are all influenced by the structure of education systems within and across countries.

3. STRUCTURE OF EDUCATION SYSTEMS

To gain some understanding of the function of the lower secondary phase of education within a particular country's system, it is important to form a picture of where this phase fits in relation to the structure of the system as a whole. Is it part of a period of compulsory education? At what ages do students transfer between the primary, lower secondary and upper secondary levels of education? This section highlights some observations concerning structures; for information on each country see Appendix 1

3.1 Lower Secondary and Compulsory Education

Lower secondary education is compulsory in 14 out of the 16 countries that are central to this study. Singapore and Korea are the two exceptions to this; in Singapore, although education from ages 6 to 16 is universal, it is not compulsory. Compulsory school attendance in Korea, from ages 6 to 12, does not encompass the lower secondary phase.

In the other 14 countries, education is generally compulsory between the ages of six (five in England and the Netherlands and seven in Sweden and in parts of Canada, Switzerland and the USA) and 16. In Japan, compulsory education ends at age 15 and Italy is currently raising the minimum school-leaving age from 14 to 15. In Australia, Canada, Germany and Switzerland compulsory full-time education can end at 15 or 16, depending on the jurisdiction. Further attendance is obligatory on at least a part-time basis until the age of 17 in the Netherlands and 18 in Germany.

The end of lower secondary education does not necessarily coincide with the end of compulsory education, which has an effect on the role of lower secondary education in terms of progression to the next phase and the qualifications that are awarded. In France, Germany, Hungary, Netherlands and the USA, for example, compulsory education continues, at least on a part-time basis, for a year or more after the end of the lower secondary phase. In England, students are required to remain in secondary education (Key Stage 4) for another two years, until the age of 16.

3.2 Ages of Transfer to and from Lower Secondary Education

This thematic study was commissioned by the Qualifications and Curriculum Authority to look particularly at 'Key Stage 3', catering for students aged 11 to 14 (see Appendix 1. It should be mentioned here that some local education authorities in England have a three tier system, whereby students transfer from primary to middle school at age 8, 9 or 10 and from middle to upper school at age 12, 13 or 14. It is worth considering whether this system, although increasingly rare, provides some answers to the problems of this stage of schooling.

An indication of the organisational diversity of the education systems in the remaining 15 countries in this study emerges from the different ages of transfer between one stage of education and the next. In the majority of countries there is a period of education between primary and the later years of secondary that can be termed 'lower secondary education'. Three notable exceptions to this are Hungary, Sweden and some states in the United States. In Hungary, students attend a 'basic school' up to the age of 10. At age 11 they can either continue in this type of institution (upper section) from 11 to 14, transferring to secondary school at the age of 14. Alternatively, students can enter secondary education from the basic school at the age of 10 or 12. Sweden's system is particularly interesting, as primary and lower secondary education constitute one continuous phase.

In some states in the United States, students transfer from the first stage of compulsory education (elementary) at the age of 14 and go straight to high school, thus eliminating a phase of education that can be termed ‘lower secondary’.

Reforms in Spain have recently changed the structure of secondary education and extended the period of compulsory education from age 14 to age 16. Under the pre-reform structure, primary education catered for six to 14 year-olds. The reforms introduced a lower secondary phase, whereby students move from primary school at age 12 and on to upper secondary education at age 16.

This section indicates the diversity in structures of education systems in lower secondary education across the countries of the *Archive*. The structure of education systems is inextricably linked to the aims of lower secondary education.

4. AIMS OF LOWER SECONDARY EDUCATION

The aims of lower secondary education and its role in the context of the wider education system are subject to a range of influences.

4.1 Academic Goals and the Influence of Social Values

The principles that underpin the curriculum in general can be divided into two broad categories: academic and personal development goals, and more general social and cultural values.

Many academic aims are reflected in the stated goals for the lower secondary phase of education. In France, for example, the overall goal for secondary education is to ensure that at least 80 per cent of students sit the general or vocational *Baccalauréat*. One of the aims of lower secondary education is, therefore, to ensure that as many students as possible continue into the upper secondary phase. Lower secondary education in France is intended to provide students with a general education and the basic knowledge and skills that will enable them to take up the variety of educational opportunities that exist immediately following compulsory education. Spain, on the other hand, includes preparation for employment among the aims for lower secondary education, while in Hungary the focus is on preparing students for an examination at the end of the phase.

Some countries (for example Korea, Japan and Singapore) state specifically that education has an important role to play in preparing students for the demands and challenges that they will face in the 21st century.

Some countries make specific reference to the personal development of students. The Netherlands, for example, refers to promoting the general development of students by helping them to acquire knowledge, insight and skills. In Italy, one aim is to educate students for adulthood and in Sweden schools aim to provide students with knowledge and skills to develop them into responsible members of society. Lower secondary education in Spain serves partly to train young people to assume their responsibilities and exercise their rights.

The current focus on 'citizenship' education, as part of the educational reforms currently underway in the majority of countries in the *Archive*, reflects the importance being attached to preparing both individuals and society in general to respond to the challenges and uncertainties of the new millennium. Citizenship education is firmly built into the curricula of the majority of the countries, with the exception of England and Australia, where it was made a compulsory subject in 1999. In England, meanwhile, it is to become a statutory entitlement from September 2002, separate from the citizenship education currently delivered as part of the provision of Personal Social and Health Education (PSHE) (Kerr, 1999).

Countries may share the drive towards increasing citizenship education, both as a subject in its own right and across the curriculum; however, the societal and cultural values that underpin its aims are wide-ranging. Singapore and Sweden are two countries where national aims are reflected in the aims of lower secondary education. In Singapore, the strength and importance of national identity is reflected in the fact that lower secondary education must teach students to 'know' Singapore (which develops from learning to 'love' Singapore at primary level, and prepares for learning to 'lead' Singapore at upper secondary level). In Sweden, fundamental democratic values underpin the aims of lower secondary education.

The values promoted in schools are being affected by the increase of violence both within schools and in the wider society in several countries. For example, in Sweden the recent rise in racism and neo-nazism has led to a review of basic values in schooling, and has focussed attention on combating racism and violence and fostering a multicultural society. By placing greater emphasis on modern history, the Swedish system attempts to raise awareness of issues connected with living in an increasingly

multicultural environment. Canada builds violence prevention into the school curriculum, and in the Netherlands violence in society has led to a greater emphasis on values education. Similarly, in Japan, where the curriculum content is to be reduced to accommodate reforms, morality is the only subject that will not be reduced, in response to the increasing rate of juvenile violence and related problems over recent years.

4.2 Role of Lower Secondary Education

There is some debate surrounding the role of lower secondary education in relation to other phases, chiefly, whether it represents a continuation of primary education or whether its main aim is to prepare students for the upper secondary phase. Aligning lower secondary too closely with the primary phase can result in students being insufficiently prepared for the upper secondary phase. However, where lower secondary is oriented mostly towards upper secondary education, the gap between primary and secondary education is widened, leading to problems in progression and continuity. There is also a danger that each phase of education becomes chiefly a preparatory stage for the next, with less importance attached to the specific aims of that phase.

As expected, the study has found diverse practice. An interesting development in New Zealand is the growth in 'middle schools' that cater for the 11 to 15 age group (secondary schools have generally catered for students from ages 13 to 18). However, commentators have expressed concern that these new schools have more in common with primary education than with upper secondary education, making it more difficult for students to transfer from middle to upper secondary schools.

In Germany and Spain, the emphasis is on preparation for upper secondary education. This is also the case in Japan, where, in the eyes of parents and students, lower secondary education plays an important role in preparing students for highly competitive entrance examinations for the most sought after upper secondary schools. Concern over the high level of competition and the resulting pressure on students at the lower secondary level has led to recent moves to introduce a new type of school that covers the full six years of secondary education. This is in sharp contrast with recent developments in New Zealand outlined in the previous paragraph.

The role of lower secondary education is determined to a certain extent by the nature of assessment at this level, which will be dealt with in more detail in section 7. The

key issue concerns whether assessment is 'high stakes' (directly influencing student progression) or 'low stakes' (no impact on student progression). In France, there is no high stakes testing, which may account for lower secondary education being referred to by one commentator as a 'weak link' in the system.

Lower secondary education is influenced by both academic aims and social and cultural values and there are question marks over the precise role of this phase. The aims of lower secondary education both influence and are influenced by its organisation.

5. ORGANISATION OF LOWER SECONDARY EDUCATION

Aspects of the organisation of lower secondary education vary greatly between systems which may, nevertheless, share common features. Some illustrative examples follow.

5.1 Type of Provision and Entrance Requirements

The majority of the 16 countries generally offer an undifferentiated curriculum in institutions that cater for all abilities at lower secondary level (Australia, Canada, England, France, Italy, Japan, Korea, New Zealand, Spain and Sweden). In these countries, in most mainstream schools, selection for courses based on academic achievement does not take place until the upper secondary level. Alongside the common core curriculum, optional subjects are offered at varying stages and in varying numbers. Although all these countries offer alternative school types to cater for certain special needs or interest areas, they are peripheral to the mainstream provision. It is interesting to note that, according to one commentator, the issue of different types of specialist schooling at lower secondary level is currently of particular interest in the province of Alberta in Canada, where alternative provision (such as schools that specialise in business or special institutions for the gifted) is seen as a key issue and area of development.

Differentiated provision at lower secondary level, based on student ability, means that in some countries the path of a young person's school career can be determined from the start of lower secondary education, usually involving some form of academic selection. In the German system, in addition to the *Gesamtschule* (which offers all types of education in one institution) there are three main types of lower secondary school, all of which lead to different levels of qualification and to different types of

education at upper secondary level. Achieving the flexibility to move between the different types of school is a high priority in this system.

The Netherlands offers a common foundation curriculum (*Basisvorming*) for the first three years of the lower secondary stage. However, from the start of lower secondary education, students receive their education in different types of schools or sections, which prepare them for differentiated final examinations to be taken at age 16, 17 or 18.

Singapore and Switzerland offer differentiated courses within the same institution. In Singapore three types of course ('normal', 'special' and 'express') cater for students of differing academic abilities. Similarly, elementary, general and advanced streams in Switzerland prepare students for different types of upper secondary course.

Where there is differentiated provision at lower secondary level, there are specific academic entrance requirements. Admission can be based on teacher recommendation (Germany and the Netherlands) or dependent upon results in the primary school leaving certificate (Singapore). Selection in Switzerland varies according to the system in each *Canton*, but all students must sit an entrance examination if they are to enter the most academically oriented of the secondary institutions, the *Gymnasium*.

Selection to enter certain types of secondary school occurs in some countries where a common core curriculum is followed at lower secondary level. In Australia, this depends on the state or territory; for example, comprehensive schools in Victoria do not select by ability, whereas in New South Wales an entrance examination must be taken to enter selective schools, of which there are currently 23. In the remaining 'grammar schools' in England, students are selected by academic ability, and there are specialist colleges (for example in technology, music or sport) where students are selected by aptitude.

5.2 Demands on Student Time

The weekly number of hours of schooling at lower secondary level tends to exceed those of than at primary education, and varies from under 30 hours in England and France over five days, to over 50 hours spread over six days in Korea. Japan, where school hours amount to around 45 over a six-day week, is planning to cut the number of hours, as well as reducing the school week to five days in 2002. In most countries, schools operate during both mornings and afternoons. Singapore and Germany are

exceptions, with classes held in German schools only during the mornings and Singapore currently operating a shift system in some schools, whereby students attend either in the mornings or afternoons.

Information on many countries indicates that the setting of homework is a matter for individual schools or teachers to decide. Interestingly, in the Swiss *Canton* of Berne there is a limit of four hours of homework per week, although it is acknowledged that homework is an essential part of the curriculum. This contrasts markedly with the long hours of extra work that are typical in, for example, Korea, where students are expected to spend at least two hours per night on homework. Competition and the need to succeed are so great in Japan that, according to a survey by the Ministry of Education carried out in 1994, more than half of lower secondary students attend a private cramming school (*Juku*) outside their normal school hours, usually for another five or six hours a day. Much of the curriculum is learnt at *Juku* before it is taught in schools, causing problems for teachers when school is not taken sufficiently seriously by students.

The structure of the academic year and length and frequency of school holidays is currently subject to debate internationally. Some countries are moving away from the traditional three-term system. New Zealand, for instance, introduced a four-term year in 1996, when research revealed that students were less tired and better able to concentrate when terms were shorter and breaks more frequent. There is now a six-week summer break and three two-week breaks between each term. Singapore also operates a four-term year, with breaks of between one and six weeks in length.

5.3 Student Attendance

Irregular student attendance affects many schools throughout the 16 countries. In England, for example, the problem of unauthorised student absence often necessitates action to be taken by senior management at school level and is the subject of targets for schools. The existence of a 'truancy initiative' in New Zealand implies that there are concerns about attendance problems, particularly among transient communities. According to one commentator, truancy is also an area of concern in Spain.

5.4 Grouping

Countries have differing strategies for grouping students for lessons. Grouping can be according to ability, either by 'setting' (when students are grouped by ability for certain subjects) or 'streaming' (putting students into overall ability groups for all

subjects). Advocates of ability grouping claim that it provides better opportunity for achievement, both for the most and the least able. The controversial nature of this issue has led to much debate in England over recent years and research does not provide unequivocal evidence either in favour or against. Protagonists of mixed ability classes claim that the setting or streaming of students leads to a system that fosters competition and requires undesirable divisions to be drawn between 'able' and 'less able' students, which can adversely affect students' entitlement to the whole curriculum.

In countries where streaming is practised, differentiated examinations at the end of the lower secondary phase lead to different types of qualification. This can be organised either by placing students in different types of institution (as in most schools in Germany and the Netherlands), or in different classes within the same institution (as in Singapore and many *Cantons* in Switzerland).

A combination of mixed ability teaching with setting in core subjects prevails in most countries. In a few countries, the strong tradition of mixed ability teaching is giving way to a trend towards setting; France, for example, where grouping students by ability has been forbidden by law, is considering setting in certain subjects. Spain is introducing some differentiation for very low ability students or special tuition groupings for literacy and numeracy. Although it would go against the core principles of the Swedish education system, Sweden is also debating the possibility of having separate classes for more able students. Conversely, there is a move in many middle and high schools in the USA away from streaming in favour of mixed ability classes.

5.5 Progression

Systems vary according to whether students progress automatically from one year to the next within the phase of lower secondary education, or whether they are required to repeat a year if levels of achievement are not satisfactory. Lower secondary students in seven of the participating countries progress automatically from year to year with few exceptions (Australia, England, Japan, Korea, New Zealand, Spain and Sweden). In a further eight countries, progression is subject to student performance, and depends either on assessment or on teacher recommendation (Canada, France, Germany, Hungary, Italy, Netherlands and Switzerland). In the USA, automatic promotion is being supported in some areas through, for example, holding summer courses to improve basic skills such as reading or mathematics. There is a move in

some districts (for example, Chicago and Cincinnati) to depart from the practice of automatic progression.

5.6 Teacher Education

The orientation and role of lower secondary education referred to in section 4 is influenced by the nature of teacher education for this level. Where significant differences in teaching and learning approaches between primary and upper secondary education exist, the orientation of the lower secondary teacher to one or other of these levels is an important consideration. Teachers may be qualified to teach students at a single level, or at a combination of two levels (primary and lower secondary, or lower and upper secondary). This also raises the question of whether teachers are subject generalists (teaching a range of subjects, as is more common at primary level in most countries) or subject specialists (in one or two subjects, as is generally the case throughout secondary level). The balance between (or the respective priority given to) skills based or academic courses in teacher education has stimulated debate and reforms in, for example, Switzerland, France and England. Switzerland provides an interesting example of a system where teacher education for teachers at lower secondary level differs from that of primary and upper secondary teachers. While primary teachers are subject generalists and upper secondary teachers teach one specialist subject, lower secondary teachers teach four subjects.

In Hungary, teachers of the 10 to 12 age range tend to be generalists, with specialists in certain subjects; whilst from age 12 onwards all subjects are taught by specialists. Teachers at lower secondary level in other countries are generally subject specialists in one or two subjects, contrasting with primary school teachers, who generally teach across the curriculum. In New Zealand, transfer from primary to lower secondary education is aided by the introduction of different subject teachers at upper primary level.

This section indicates that a largely undifferentiated curriculum is offered at lower secondary education level in most countries. Variations in the length of the school year, demands on student time, different forms of grouping and requirements for progression to the next year are in evidence. By contrast, a shared characteristic is that in most countries teachers are trained as subject specialists. Broader organisational factors cited in this section impinge on the nature and organisation of the curriculum in this phase.

6. CURRICULUM

Diversity in lower secondary curricula reflects differing aims for and approaches to the education of young people at this stage of their development. The variables affecting students' experience of the curriculum, considered in this thematic study, include: the control of the curriculum, curricular organisation and content, classroom practice and continuity from the primary curriculum.

6.1 Control of the Curriculum

The level at which curricula are determined affects the amount of flexibility to adapt learning programmes to the local and individual needs of students. In some countries, curricula are fully determined at national level and implemented by individual schools, (for example, France, Italy and Singapore). In other countries, curricular frameworks are nationally determined, with greater flexibility at school level to determine learning programmes (for example, New Zealand, Japan, Korea and Spain). Federal countries, where responsibility is devolved to states, provinces territories and *Cantons*, take different approaches. In the USA, the curriculum is determined at state or district level with little collaboration between states. In Australia, Canada and Germany, devolved responsibility is tempered by degrees of collaboration. Switzerland provides an example of a federal system where curricula are determined at *Canton* level but interpreted at local level, with accountability resting with schools and communities.

Recent moves towards a more devolved system in New Zealand, the Netherlands, Sweden and Hungary have led to greater school autonomy in determining their curricula. However, while diminishing overall national control of the curriculum and increasing school autonomy allows for greater flexibility in catering for the needs of students, there is a danger that this also leads to more diverse, less equal provision, in which students moving from one school or area to another may be disadvantaged. The Netherlands attempts to address this problem by determining core objectives that are intended to ensure equal provision. In Hungary, critics indicate that recent fears that decentralisation has gone too far are leading to calls for greater external control over curricular content. The delegation of curricular control to school level in New Zealand is said to have enabled schools to be more responsive to local needs. A commentator from New Zealand has referred to the fact that, paradoxically, although a fifth of schools found this arrangement beneficial, around a fifth encountered problems and for these institutions greater central control has been reinstated.

Sweden currently devolves much control of the organisation of the curriculum to schools. Following a decision passed by parliament in May 1999, further devolution is being piloted in a third of schools over a five-year period. This will represent a move away from the current curriculum which specifies the number of hours to be spent on each subject over the nine years of compulsory education (for example, 900 hours of English should be taught over the whole period). Instead, the number of hours to be spent on the whole curriculum is specified (a minimum of 6,665 hours), allowing even greater freedom to schools to determine how much time to devote to each area of the curriculum to achieve the goals which they have set.

6.2 Curricular Organisation and Content

Although there are many similarities in their content, curricula in all countries are at different stages of development, in terms of their control, organisation and the approach to defining learning priorities.

The question of flexibility in the curriculum, referred to above, is also an important issue in curriculum organisation. The amount of flexibility in the curriculum is partly reflected in the number of compulsory subjects required. All countries define compulsory subjects or subject areas at lower secondary level. This ranges from three compulsory core subjects in Sweden (Swedish, English, mathematics) to around 15 subjects that must be studied at some stage during the four years of lower secondary education in France[2]. Although the majority of Swedish students will study the types of subjects that are compulsory in France, there is greater flexibility for schools or students to specialise in certain subjects or subject areas.

Many countries, including England, are seeking a balance between allowing sufficient flexibility for students to pursue studies that they perceive as interesting and relevant, while also providing a framework of compulsory core subjects or subject areas. The ongoing process of curricular reform in some countries reflects the attempt to combine flexibility with prescription.

To increase flexibility in the curriculum, certain countries are considering reducing the breadth of the compulsory core. In 1993, the Netherlands introduced a compulsory core curriculum for all students for the first three years of lower secondary education (*Basisvorming*), consisting of 15 subjects and over 300 attainment targets. The

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[2] French, mathematics, modern foreign languages, history, geography, civic education, life and earth sciences, physics, chemistry, biology, geology, economics, technology, art education, PE and sport

current review process has raised concerns that it may be too broad and that a reduction in the number of compulsory core subjects will achieve greater flexibility. Japan is planning to reduce the content of the curriculum by around 25 per cent by the year 2002.

Optional subjects offer students some flexibility. Provision varies from country to country, both in terms of how many options are offered, and when they are introduced. In Italy, for example, there are no optional subjects at lower secondary level (although students are able to opt out of Religious Education). In the remaining 15 countries, where other optional subjects are offered at this stage, they tend to focus on foreign or second languages (particularly in countries with more than one mother tongue) and technological or practical subjects. Most countries allow a limited amount of student choice at lower secondary level, either from the start of this phase (as in Hungary and Germany) or after the first year or two (for example in Australia, France, Japan and Spain).

How the curriculum is defined and organised also affects the level of flexibility at school level. In recent developments in Hungary and New Zealand there has been a move away from a curriculum based on individual subjects. 1995 curricular reforms in Hungary have introduced a curriculum at lower secondary level that comprises 10 'comprehensive cultural domains'.

New Zealand has drawn lessons from the curricula of Canada (where, although curricula vary between provinces, all define a minimum of four broad learning areas; language arts, mathematics, science and social studies) and Australia (which defines six to eight 'key learning areas'). In New Zealand, the curricular review process over the last decade has replaced individual subjects with a new curriculum (which is to be fully implemented by 2001) which specifies seven 'essential learning areas'. These learning areas incorporate many of the optional subjects that previously made up nearly a third of curriculum time. This new format is intended to allow greater flexibility for schools and, by incorporating eight 'essential skills', provides a broader and more integrated curriculum. It was suggested at the international seminar suggested that having curricular areas rather than subjects may provide greater flexibility for both students and teachers to specialise within each of the subject areas.

The Department for Education and Employment in England recently commissioned a paper to review research into thinking skills (McGuinness, 1999). This paper looks, among other things, at how to develop these skills in children, and how to integrate

the teaching of thinking skills into the curriculum. England is not the only country to be considering this development; the curricular review in Singapore is focussing on developing skills for students to be able to meet challenges for the future, including the ability to think creatively and critically. Teachers are expected to incorporate relevant activities into their teaching across the curriculum.

Although the new curriculum in New Zealand is intended to allow a greater level of flexibility at school level, the percentage of curricular time allocated to optional subjects has been reduced from around 30 per cent to approximately 10 per cent. Rather than having a distinct divide between the compulsory and optional parts of the curriculum, greater flexibility is built in to each learning area. In Germany, on the other hand, there has been a proposal to increase flexibility by allocating more curricular time to be determined at school level and offering greater curricular choice, giving more opportunity to students to pursue optional subjects, specialise in certain areas, and devote more time to pre-vocational studies. This provides an illustration of two countries that seem to be adopting different strategies to achieve flexibility.

6.3 Classroom Practice

Although some curricular guidelines state preferred teaching practices (for example, in France and Germany), teachers generally have some freedom to determine their own methods. Among the recommended teaching approaches there are certain trends. Some guidelines refer to more interdisciplinary teaching (for example, Italy and Canada), greater use of technology and multimedia teaching aids (for example, Germany and Korea), encouraging more active student participation through activities such as group work (for example, Singapore, Sweden and Switzerland) and fostering active learning (for example, the Netherlands). Teaching and learning strategies recommended in the recent reforms in the Netherlands specifically refer to relating learning directly to the lives of the students.

One of the suggested benefits of the tendency to move away from teacher-centred ‘chalk and talk’ teaching methods towards greater student participation in lessons is that students gain a greater sense of ownership and control of their own learning. Research into classroom practice in Switzerland has revealed survey evidence indicating that around 37 per cent of classroom time is devoted to pair work or group work, compared with around 27 per cent of the time that students spend listening to the teacher.

Strategies for fostering an effective school and classroom learning environment in terms of student behaviour may be adopted at individual school level, or may be nationally determined. For example, in Sweden, the national curriculum specifically refers to the responsibility of schools to deal with bullying, persecution, xenophobia and intolerance and 90 per cent of schools have drawn up procedures. Similarly, New Zealand has devised a pro-active disciplinary approach to violence and bullying, and students themselves are involved in developing codes of conduct.

6.4 Continuity

Curricular continuity is an important element in the effective transfer of students from primary to secondary level. This must be considered both in terms of the broad curricular requirements of each phase, as well as teaching methods. Even where, in theory, the subjects or learning areas are the same throughout primary and lower secondary levels (as in Australia, New Zealand, Hungary and Sweden), there is still a challenge in securing continuity in terms of the content of the curriculum and the way it is taught.

Commentators suggest that continuity between the primary and lower secondary levels may be heightened by the introduction of teaching methods (interactive, student-centred) that prevail more commonly at primary level. In New Zealand, if schools are large enough, specialist teachers for different subjects are introduced in the latter years of primary school. Particular efforts are made to ensure continuity of teaching practices in the province of Alberta in Canada, where teaching methods and structures used at primary level (such as interdisciplinary programmes, collaborative teaching and group work) are also used in junior high schools. However, efforts to improve continuity should not diminish the importance of choosing teaching methods suited to the needs of each particular age group and curricular area.

6.5 Policy into Practice

The delivery of the curriculum is particularly susceptible to the gap between intention and practice. There are several stages through which a nationally determined curriculum or curriculum framework must pass between being ratified by policy makers and its implementation by teachers in the classroom. This raises two potential problems: the scope for misinterpretation, and the feasibility of its delivery in the classroom. Both Spain and New Zealand refer to this as a current issue. In Spain, expression of the curriculum in terms of concepts, procedures and attitudes is said to be very difficult for teachers to translate into classroom practices. Similarly, in New

Zealand, teachers are said to have problems translating curricular aims into practical teaching strategies.

The relationship between expectations for the curriculum set by policy makers and the reality of what is delivered in the classroom can be problematic. In the Netherlands, for example, one of the aims of curricular reform is that teachers develop more active, student-centred teaching and learning strategies. There is a gap, however, between the intention and implementation of such targets, and recent evaluation of this aspect of the reforms has indicated that teachers are not adequately prepared to abandon long-standing teaching methods and adopt such new strategies. To allow teachers in Singapore time to implement changes and focus on new methods and strategies arising from the curricular review, 30 per cent of the curriculum is being temporarily suspended. This raises an important question concerning the management of change and provides an example of a situation where measures may need to be taken to enable practitioners to implement changes in policy

Equally, the interdependence between the requirements of the curriculum and its assessment and delivery indicates that a change in one must involve a change in the other. For example, in Singapore teaching and learning at lower secondary level is geared towards the examinations taken at the age of 16, for which currently a large amount of rote learning and memorisation is necessary. If there is to be a move towards developing creativity, thinking skills and problem-solving skills, this will necessitate changes in the nature of the examinations, as well as in the curriculum and in teaching and learning approaches. Equally, Japan is planning to implement new teaching guidelines in 2002, which will combine a reduction in the content of the curriculum with a new direction in teaching and learning, focussing not only on developing creativity but also on increasing students' interest in learning and equipping them with learning skills, rather than the teaching of facts. Critics are concerned that the new courses of study will not be effective as long as students continue to be faced with the competitive examinations to enter high school, for which they are required to memorise knowledge that is only relevant to these examinations.

This section indicates that the issue of curriculum control is the subject of debate in many countries and that countries are seeking a balance between prescription and flexibility, as well as continuity in terms of curricular content and approach. There is also a move towards adopting broader teaching and learning approaches so that they relate to the lives and needs of students. There is a considerable gap between policy and practice in terms of the intended curriculum and what is actually taught. How the

curriculum is organised and approached is also bound up in decisions about assessment practices and procedures.

7. ASSESSMENT

7.1 Forms of Assessment

All students are assessed throughout lower secondary education through continuous assessment which is school or teacher-based. Some formal assessment or certification takes place in all countries towards the end of lower secondary education and again at the end of the upper secondary phase. Generally this assessment is nationally-determined and recognised (or in federal countries determined by each state, province, territory or *Canton*). In Japan, however, there is no national system or examination; schools conduct their own examination at the end of this phase.

Assessment procedures at the end of lower secondary education vary; in most countries, the end of lower secondary education coincides with the end of compulsory education and with the award of a nationally recognised qualification. Where this is the case, student choices at the end of lower secondary education are determined by their level of achievement during this stage. In some countries this is based on a leaving examination (Japan, Korea, Italy[3], New Zealand, Singapore and Sweden). In Spain, there is no formal examination, but a leaving certificate is awarded on the basis of teachers' continuous assessment. Although assessment is determined by federal states, provinces or territories in Australia, Canada, Switzerland and the USA, there is generally a recognised leaving certificate or qualification at the end of the lower secondary phase.

Assessment procedures in other countries follow a more diverse pattern. Reforms in Hungary have introduced a system whereby attainment targets are set for ages 10, 12 and 14. Currently there is no assessment at the end of compulsory education (at age 16); however, a basic examination is to be introduced from 2002 to provide some certification for school leavers at the end of compulsory education.

In Germany, different certification structures can apply at the end of the lower secondary phase, based on assessment of student performance throughout the year rather than a formal examination. Students in the more academic *Gymnasium* do not receive a leaving certificate at the end of lower secondary education, as they are expected to continue in the same institution. Students in the other types of lower

[3] Italy is soon to extend the period of compulsory education from age 14 to 15.

secondary education receive a leaving certificate appropriate to their course. Certification at the end of the stage is important for them, as good results will provide them with a wider choice of opportunities. However, there is some debate in Germany about whether there should be a common certificate for all students at the end of the lower secondary phase.

In England, there are statutory national assessment tests in English, mathematics and science at the end of Key Stage 3 (age 14). However, students' performance in these tests does not affect their progression to the next key stage (Key Stage 4). In Key Stage 4 the focus of student concern is the public examinations taken at the end of the key stage at age 16 (GCSE examinations), as these influence access to upper secondary courses and employment. The effect of this is that assessment at age 14 may not be taken sufficiently seriously by students, whose achievement may be affected as a result.

As in England, assessment at the end of the first phase of secondary education in the Netherlands and France does not coincide with the end of compulsory education. In these countries, statutory testing at age 15 does not necessarily affect the progression of students to the next phase as they must stay in school for at least one more year in order to complete compulsory education. In the Netherlands, they remain in the same institution, whereas in France they progress to an upper secondary institution that specialises either in general and technological education (*Lycée d'enseignement général et technologique*) or vocational studies (*Lycée professionel*).

Other national assessment schemes exist during lower secondary education. In France, for example, mass diagnostic testing is carried out at the age of 11 (at the start of lower secondary education) to inform teaching methods and programmes. A national survey, using a sample of students, is conducted by the National Institute for Quality and Evaluation in Spain at the end of lower secondary education. As well as providing information on progress and achievement of students for certification purposes, national assessment schemes are also used formatively by teachers to plan programmes, or by education authorities to evaluate teachers, schools or the curriculum to enable them to make improvements or changes to the education provision where necessary.

Regular communication with parents and recording of results are considered to be important elements of assessment and student motivation in all countries, with meetings between parents and teachers taking place usually once or twice a year.

Most schools keep continuous records of students' achievements, which are available when they leave, either in the form of report cards or 'records of achievement'.

7.2 Role of Assessment

The role of assessment of student performance at lower secondary level reflects, to some extent, the importance of this level of education within the wider education structure. The objectives for lower secondary education in countries where it culminates in 'high stakes' national assessment or testing (which dictate progression to the next stage) may differ considerably from those where formal assessment at this stage is 'low stakes', not affecting student progression. Student motivation may also be affected by the fact that their levels of achievement throughout lower secondary education will directly affect their future academic or career choices.

The role of national assessment schemes such as standardised testing, or mass diagnostic testing is sometimes contentious. For example, in the province of Alberta in Canada, province-wide standardised tests are carried out, serving a range of purposes, from assessing student achievement to assessing the effectiveness of programmes of learning and of schools. These tests have been used in a recently launched school incentive programme, which aims to give financial rewards to schools that demonstrate a 3.5 per cent improvement on provincial test scores. The scheme has been rejected by teacher associations in Alberta, and raises ethical questions about tests and the uses to which they are put. The use of examination results alone to categorise schools, with no further information concerning intake or school population, it is claimed, can be misrepresentative of a school's achievements.

It is not clear whether the national mass diagnostic testing at age 11 in France (referred to above) provides secondary teachers with results they can actually use to plan their teaching programmes. There is also concern in France over the role of the media in reporting the results of these tests, implying that, although individual schools or students are not identified, negative reporting and even misinterpretation of test results can reflect badly on primary teachers.

However, standardised tests can have an important role to play in providing all schools with nationally referenced information on student achievement which enables benchmarking by drawing comparisons between the performance of their own students with national norms. All schools are thus able to access information to set their own targets. This has been raised as a particular issue in New Zealand, where

there are many small, isolated schools which would benefit from a standardised testing scheme. However, teachers and policy makers take differing views of the effects of such testing programmes in New Zealand. It is suggested that primary school teachers are not in favour of standardised testing at the end of the primary phase as this can harm a child's progress.

Assessment in the 16 countries of the *Archive* is largely continuous and nationally determined, although there is a great variety in practices. The role of assessment varies greatly between countries depending on its usage (for example for selection, progression, curricular planning). Assessment has an impact on aims, organisation, structure and curricular approaches.

8. OVERVIEW

This concluding section aims to pull together main findings from the study as represented in the preceding sections. It also seeks to take these findings further by:

- highlighting some of the key challenges facing lower secondary education in many of the 16 countries;
- presenting some of the questions, raised both by commentators from the 16 countries and in recent literature, that require further investigation by those interested in tackling the many problems that face this level of education. The issues are those that emerge from the comparative overview and are intended to provoke debate and provide a better understanding of the trends that characterise much of recent educational reform.

This section aims to take forward the findings and to lay the ground for further future investigation of this interesting phase of education both within and across the countries of the *Archive*.

In most countries of the study there is a period of education that can be termed 'lower secondary'. Exceptions include the USA (where, in some states, students transfer at age 14), Sweden (which operates a single phase for primary and lower secondary education) and Hungary (where students can transfer at ages 10, 12 or 14).

Within each of the remaining broad features of education that are the focus of this report, (aims, organisation, curriculum and assessment) some common elements between systems can be identified.

Where countries state specific aims for lower secondary education, these include those relating to academic performance (for example, France, Spain and Hungary), personal

development (for example, Netherlands, Italy, Sweden and Spain) and national or societal values (for example, Singapore and Sweden).

Looking at some of the core characteristics of lower secondary education in the 16 countries, a typical model of this phase can be identified (federal countries cannot always be included in such general observations as systems can differ between states, provinces, territories and *Cantons*):

- Lower secondary education is provided in institutions that are not differentiated according to ability (all countries except Germany, Netherlands, Singapore and Switzerland);
- All lower secondary students follow a common curriculum (all countries except Germany, Singapore and Switzerland);
- There is a nationally determined curriculum with little room for flexibility at local level (all countries except Hungary, New Zealand, Spain and Sweden);
- Separate curricula exist for the primary, lower secondary and upper secondary phases (all countries except Australia, Hungary, New Zealand and Sweden);
- Teachers specialise in one or two subjects (all countries except Switzerland);
- Formal assessment or certification at the end of the phase dictates progression to upper secondary education (all countries except England, France and the Netherlands);
- Teachers and schools practise continuous assessment throughout the phase (all countries).

These features have been selected as they are identifiable trends across the 16 countries. There are many other elements of lower secondary education discussed throughout the report that have not been referred to here, as practice is varied and general trends cannot be determined in a significant number of countries.

Geographically, the countries that are central to this study can be grouped into four areas; Asia (Japan, Korea and Singapore); Australasia (Australia and New Zealand); Europe, eastern Europe and Scandinavia (England, France, Germany, Italy, Netherlands, Spain, Switzerland, Hungary and Sweden), and North America (USA and Canada). Although some commonality can be found within them, there is considerable diversity between countries in these geographical groupings. Where common elements are shared, systems may have adopted practices from each other due to geographical proximity, or possibly due to shared aims and values.

The three Asian countries share similarities that may be attributable to the Confucian values that still partially underlie their education systems to varying degrees. Some characteristics that are common to these countries reflect these values: the long hours students spend engaged in their studies; the competition for entrance to schools and the significant importance attached to attendance at the more prestigious schools, and the prevalence of traditional teaching methods. However, some recent developments indicate divergence from these characteristics in all three countries (for example the fostering of creativity through different teaching methods in Singapore and Korea, new types of schools in Japan to reduce competition). Commentators in Korea have indicated that the influence of the Confucian ethic is waning and being replaced by international values.

Although there are some shared elements in the education systems in the countries of Europe, eastern Europe and Scandinavia, there are few that all countries have in common. Selection and 'low stakes' examinations on completion of the lower secondary phase tend to be limited to a few European countries except Singapore, which also selects at lower secondary level.

New Zealand has recently implemented curricular reforms that bring its curriculum more in line with what is offered in Australia based on seven (in New Zealand) or six to eight (in Australia) learning areas. Similarities between the two federal North American countries are harder to identify; in common with the other federal countries of this study (Australia, Germany and Switzerland), regional control over most aspects of education can lead to differing practice within one country.

Findings in this study indicate that the challenges in lower secondary education are being faced in diverse political, economic, social and cultural contexts, and the development of education systems has been dictated by differing values, resulting in a variety of structures and types of lower secondary education provision. For this reason, a study of this type cannot provide conclusions or recommendations which can necessarily be applied in all of the participating countries. Although there are some shared features among the 16 countries, there is insufficient commonality on which a set of conclusions can be based. Any attempts by countries to draw on the experiences of another system, therefore, must give careful consideration to its context.

In the drive to provide an education that will prepare students for the many demands of the new millennium, most countries are starting to focus their attention on lower

secondary education, as well as the primary and upper secondary phases, as it is recognised that this phase often faces a unique set of problems. Although the existence of some common general aims in the 16 countries (such as improving student achievement, preparing for the 21st century and encouraging student participation in the upper secondary phase) indicate that they are moving in a similar overall directions, strategies for achieving these aims may be divergent.

This study contains a great deal of factual information concerning lower secondary education in the 16 countries of the *Archive*. For reasons of clarity, this information is presented in discrete elements. However, it is important to recognise that there is likely to be an interaction between the different elements of a country's system, making it difficult to understand fully any one of values and aims, structure and organisation of education, curricular and assessment arrangements or teaching and learning methods without considering the others. For example, policies tackling single issues may be in danger of affecting the equilibrium and nature of the whole phase.

The study highlights certain key challenges that face lower secondary education in many or all of the 16 countries. Issues relating to these questions that have been raised by commentators from many countries suggest that they will not be easy to resolve without a programme of targeted research.

- **Should the role of lower secondary education be clearly defined?**

  The role of lower secondary education is often unclear. It can be forward-looking, mainly concerned with preparing students for the next phase, or backward-looking, building on the primary curriculum. Debate concerning the role of lower secondary education in the context of the education system as a whole raises questions concerning the emphasis placed on developing independence and the balance between gaining knowledge and skills, and personal and social development.

- **How can transfer between phases be facilitated?**

  Transfer from one phase to the next is affected by continuity of curricula, types of institution, organisation, teaching and learning and, in the case of transfer to lower secondary education, by the fact that students are also at a difficult stage of their personal and social development. It would be interesting to investigate whether many of the problems at this stage are avoided in the Swedish system, where students follow a common curriculum, and generally remain in the same institution, from age seven to 16.

Equally important is the level of continuity between the curricula of lower and upper secondary education. How are students best prepared to continue to upper secondary education? The upper secondary curriculum generally involves a greater degree of specialisation, leading some to consider whether the best preparation for this is in a broad-based basic curriculum, or whether providing greater opportunity to specialise at lower secondary level would provide for better continuity.

- **How can the curriculum best meet the needs of students?**

  Whether the curriculum is centrally or locally controlled, its nature is determined by national values, by the needs of individuals, or a combination of the two. This poses questions as to whether a curriculum can cater for a range of needs and abilities of individuals while also providing equality of opportunity and promoting social cohesion.

  While some countries retain a centralised curriculum (such as the German *Länder*), others are moving towards increasing devolution (such as Sweden). Commentators indicate that greater local control over the curriculum is intended to provide more flexibility to cater for the needs of individuals. However, retaining some level of central control may be the most effective way of addressing the needs of society as a whole; this is illustrated in Sweden, where, despite a high level of devolution, certain aspects of citizenship education are determined centrally, on the assumption that this is more effective in addressing social problems.

  It is not difficult to imagine the tension that might exist between increasing flexibility at local level of the lower secondary curriculum, maintaining continuity between the lower and upper secondary curricula and facilitating student transfer from one stage to the next.

- **How can teaching and learning strategies improve student motivation and achievement?**

  Within the parameters of this study it has only been possible to consider the 'intended curriculum' – what is prescribed in principle. However, in the reality of the classroom there may be significant differences between what is set out in the formal curriculum, what is actually taught and what methods are used, and what is learnt by students. Effective teaching and learning are at the heart of this process and there is a growing recognition that the mediation of curriculum by teachers and students is at least as important as the content that is prescribed.

  The atmosphere and learning ethos within schools and classrooms also play a major role in motivating or demotivating students. Small-scale, every day disruption can have a significantly negative impact on the learning environment. For this reason, schools need to consider measures that are most likely to promote a suitable climate for learning in the school generally and in individual classrooms.

- **What is the role of assessment?**

  There is no unequivocal evidence to suggest that formal assessment procedures during, or on completion of, lower secondary education necessarily serve to motivate students. It may even be the case that lower-achieving students are demotivated by formal assessment procedures, as they are less confident than high achievers, who know they can do well and are more motivated as a result. Anxiety brought on by pressure to achieve in formal testing could have a negative effect on some students.

  However, in England, research suggests that this phase of education is accorded less importance than primary or upper secondary education (it has even been dubbed 'the forgotten key stage' (Barber, 1999:2) which may be attributed to the lack of specific examination targets over the three years of Key Stage 3. With three phases of examinations during the whole secondary phase (at ages 14, 16 and 18) the system in England differs from other countries, which generally have two periods of assessment (on completion of both lower and upper secondary education). Unlike the examinations taken at age 16 in England, the national tests taken at the end of Key Stage 3 do not determine student progression. Assessment on completion of lower secondary education in the Netherlands and France also does not affect students' school career and further investigation in these two countries may reveal the extent to which this has a significant impact on motivation.

The most striking observation from the research and discussions that contributed to this study is that the particular concerns of lower secondary education are being recognised in all countries, and that, in embarking on the process of reform, many countries are facing similar problems. The fact that this study raises more questions than it answers indicates the need for further and more intensive investigation and debate into the lower secondary phase of education both at a national and international level.

The results of such investigation are crucial not only to this phase of education, but also to those that precede and follow it. If the reform of lower secondary education is to be successful it cannot be done in isolation from other phases of education. It needs not only to have strong foundations laid in primary schools on which to build, but also to provide equally firm foundations upon which upper secondary education can build. It presents a balancing act which is difficult, though not impossible, to execute. As such, it requires continuous and constructive dialogue within and across nations.

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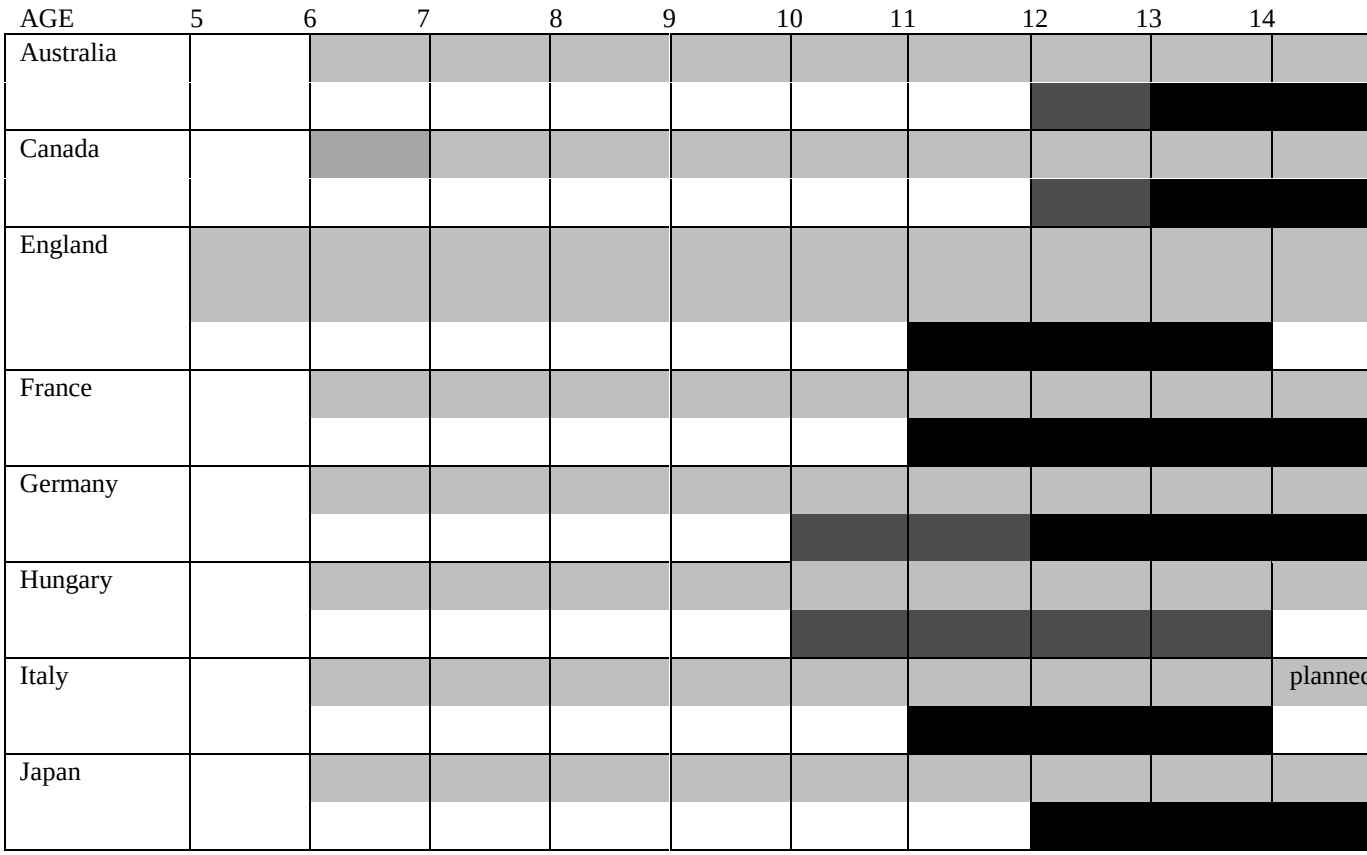
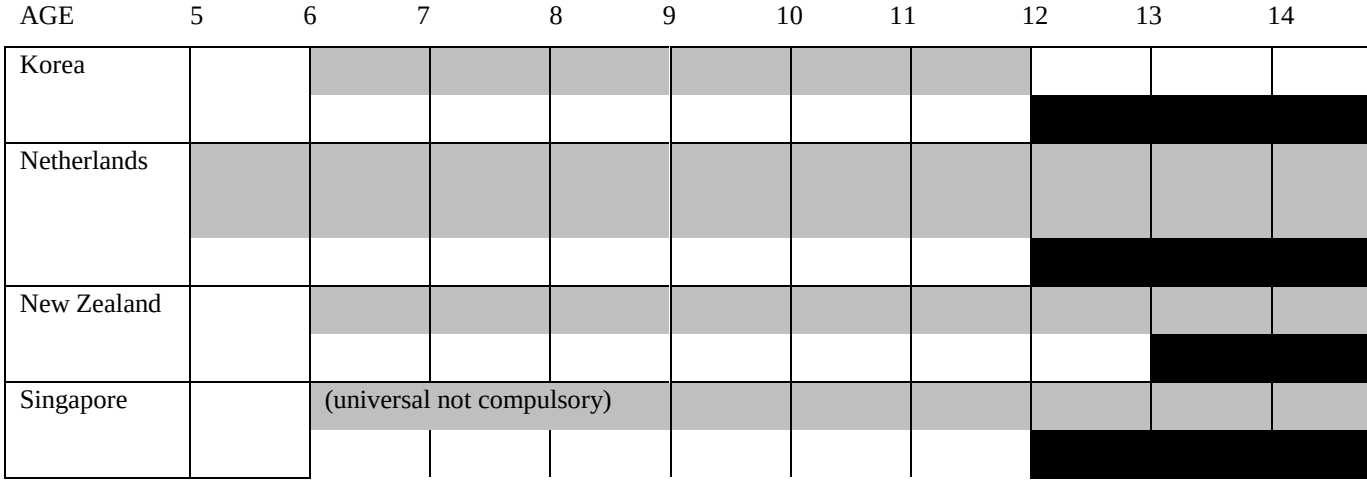
Appendix 1 Structure of Lower Secondary Education



Key

Lower secondary education	
Lower secondary education (regional variations)	
Compulsory education	
Compulsory education (regional variations)	

Appendix 1 (continued) Structure of Lower Secondary Education



Spain										
Sweden			Unified provision from ages 7 to 16							
Switzerland										
USA		Elementary								High
		Primary		Intermediate				Junior High		
		Elementary					Junior High			Senior

Key

Lower secondary education	
Lower secondary education (regional variations)	
Compulsory education	
Compulsory education (regional variations)	

Appendix 2 Features of Lower Secondary Education

Country	Control of curriculum[4]		Provision		Grouping			Entrance to lower secondary dependen on:
	National framework	National curriculum	Common	Differen-tiated	Age	Age/some setting	All ability	
Australia			X		X			(federal state)
Canada			X			X		(federal state)
England		X	X			X		Age
France		X	X		X			Age
Germany				X[5]		X[7]		Teacher recommendation
Hungary		X	X			X		Depends on school typ
Italy		X	X		X			Primary school certificate
Japan		X	X		X			Primary school certificate
Korea		X	X			X		Lottery (regardless of achievement)
Netherlands		X	X [3]		X[7]			Teacher recommendation
New Zealand	X		X			X		Age
Singapore		X		X[4]			X	Primary school certificate
Spain	X		X		X			Age
Sweden	X		X			X		
Switzerland				X[5]		X[5]		Selection procedures depend on federal stat
USA			X[6]			X[6]		(federal state)

[4] In Federal countries (Australia, Canada, Germany, Switzerland and USA) the curriculum is determined at the level of federal state
[5] Differentiated curriculum offered in separate institutions
[3] Common curriculum offered in different institutions
[4] Differentiated curriculum offered in same institution
[5] Depends on *Canton*
[6] Depends on State
[7] Within differentiated provision