EURYDICE

Directorate-General for Education and Culture

Key Competencies

Survey 5

European Commission

Key Competencies

A developing concept in general compulsory education

Eurydice
The information network on education in Europe

This document is published by the Eurydice European Unit with the financial support of the European Commission (Directorate-General for Education and Culture).

Available in English and French.

D/2002/4008/13
ISBN 2-87116-346-4

This document is also available on the Internet (http://www.eurydice.org).

Text completed in October 2002.

Cover photograph: © Photo: Gettyimages, Amsterdam, The Netherlands.

Layout and printing: Enschedé/Van Muysewinkel, Brussels, Belgium

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Foreword

Preparing young people both to successfully face the challenges of the information society and derive maximum benefit from the opportunities it provides has become an increasingly important objective of education systems in Europe. It has led those in charge of education policy to review curricular content, and teaching and learning methods. This has inevitably led in turn to heightened interest in key competencies, namely those competencies considered vital for a lifetime of successful participation in society.

Numerous initiatives at European level reflect this growing interest. To the forefront is the detailed work programme on the future objectives of education and training systems up to 2010. Against this background, it was considered necessary to identify a common European perception of the definition and selection of competencies that all citizens should acquire. In the summer of 2001, the European Commission entrusted a working group of national experts with the task of defining the concept of 'key competence' and identifying a set of such competencies recognised by all EU countries.

In order to inform and complement the current debate on key competencies, the Eurydice network launched a survey on the subject. The coverage of the research entailed was limited to the period up to the end of general compulsory education. The overall objective of the survey was to establish, in the case of each individual country, whether and how the concept of 'key competence' was defined, how the development of such competencies was reflected in the requirements of the curriculum and how they were assessed. A questionnaire was devised by the Eurydice European Unit and sent to all EU National Units in March 2002. Contributions from each country were prepared on the basis of a working partnership between the National Units and national experts within and outside the education ministries. This information was forwarded to the Eurydice European Unit where it was analysed and enabled identification of some initial findings. The survey, therefore, which draws together up-to-date information on key competencies in the EU Member States, should serve as a helpful reference source for all those with an interest in the subject.

Patricia Wastiau-Schlüter,
Head of the Eurydice European Unit
October 2002

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GLOSSARY

Country codes

EU	European Union
B	Belgium
B fr	Belgium – French Community
B de	Belgium – German-speaking Community
B nl	Belgium – Flemish Community
DK	Denmark
D	Germany
EL	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	Netherlands
A	Austria
P	Portugal
FIN	Finland
S	Sweden
UK	United Kingdom
UK (E/W)	England and Wales
UK (NI)	Northern Ireland
UK (SC)	Scotland

National abbreviations in their language of origin and other abbreviations

ACCAC	*Qualifications, Curriculum and Assessment Authority for Wales*	UK
ALL	Adult Literacy and Lifeskills Survey	
ASDAN	*Award Scheme Development and Accreditation Network*	UK
BLK	*Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung*	D
CCEA	*Northern Ireland Council for the Curriculum, Examinations and Assessment*	UK
CEB	*Certificat d'Études de Base*	B
CES2D	*Certificat d'Enseignement Secondaire deuxième Degré*	B
CESS	*Certificat d'Enseignement Secondaire Supérieur*	B
CFK	*Centrale Kundskabs og Fardighedsemrader*	DK
CIDE	*Centro de Investigación y Documentación Educativa*	E
CIVED	Civic Education Study	
COMPED	Computers in Education	
CSPE	*Civic, Social and Political Education*	UK
DEB	*Departamento da Educação Básica*	P
DEPPS	*Diathematiko Eniaeo Plaesio Progammaton Spoudon*	EL
DeSeCo	Definition and Selection of Competencies	
EAL	*English as an additional language*	UK
ESO	*Educación Secundaria Obligatoria*	E
FIMS	First International Mathematics Study	
FISS	First International Science Study	
GAVE	*Gabinete de Avaliação Educacional*	P
GCSE	*General Certificate of Secondary Education*	UK
HAVO	*Hoger algemeen voortgezet onderwijs*	NL
IAEP	International Assessment of Educational Progress	
IALS	International Adult Literacy Survey	
ICT	Information and communication technology	
IEA	International Association for the Evaluation of Educational Achievement	
INCE	*Instituto Nacional de Calidad y Evaluación*	E
IOLP	*Improving Own Learning and Performance*	UK
IPN	*Institut für die Pädagogik der Naturwissenschaften*	D
IT	Information technology	
KIMMOKE	*Kielenopetuksen monipuolistamis – ja kehittämishanke*	FIN
KMK	*Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland*	D
KOKU	*Koulu ja kulttuuri*	FIN
LATU	*Laatua opetukseen, tukea oppimiseen*	FIN
LEA	*Local Education Authority*	UK

LOGSE	*Ley Orgánica de Ordenación General del Sistema Educativo*	E
LUMA	*Luonnontieteiden ja matematiikan opetuksen kehittämisprojekti*	FIN
MEC	*Ministerio de Educación y Ciencia*	E
MECD	*Ministerio de Educación, Cultura y Deporte*	E
NCCA	*National Council for Curriculum and Assessment*	IRL
NFER	*National Foundation for Educational Research*	UK
NLS	*National Literacy Strategy*	UK
NNS	*National Numeracy Strategy*	UK
OECD	Organisation for Economic Cooperation and Development	
PIRLS	Progress in International Reading Literacy Study	
PISA	Programme for International Student Assessment	
POF	*Piano dell'Offerta Formativa*	I
PS	*Programmata Spoudon*	EL
QCA	*Qualifications and Curriculum Authority*	UK
RDG	*Rat der Deutschsprachigen Gemeinschaft*	D
RLS	Reading Literacy Study	
SCOTCAT	*Scottish Credit Accumulation Transfer*	UK
SCQF	*Scottish Credit and Qualifications Framework*	UK
SCRE	*Scottish Council for Research in Education*	UK
SEU	*Standars and Effectiveness Unit*	UK
SIMS	Second International Mathematics Study	
SISS	Second International Science Study	
SITES	Second Information Technology in Education Study	
SPHE	*Social, Personal and Health Education*	UK
SQA	*Scottish Qualifications Authority*	UK
SQC	*Scottish Qualifications Certificate*	UK
SQCF	*The Scottish Credit and Qualifications Framework*	UK
ST.A.M.	*Studiegroup Authentieke Middenschool*	B nl
TIMSS	Third International Mathematics and Science Study	
TIMSS	Trends in Mathematics and Science Study 2003	
TIMSS-R	Third International Mathematics and Science Study Repeat	
VMBO	*Voorbereidend middelbaar beroepsonderwijs*	NL
VWO	*Voorbereidend wetenschappelijk onderwijs*	NL
WWO	*Working With Others*	UK
ZEP	*Zones d'Éducation Prioritaire*	F

Introduction

Developments during the second half of the 20th century have brought radical social and economic change to Europe. Globalisation and its manifestation in the cultural, political, economic and environmental fields have been the major force behind this transformation. Scientific and technological progress, especially in the communications industry, have promoted international integration and cooperation but also intensified international competition. In order to develop quick responses to the challenges of this new order while safeguarding and improving their socio-economic standards, European countries have recognised knowledge as their most valuable resource for fuelling economic growth. Increased production, distribution and application of knowledge in all its forms are instrumental in the creation of economic and cultural prosperity. Knowledge is recognised as the driving force behind personal and occupational development. Where people acquire knowledge, learn skills and transform them into competence for meaningful use, they not only stimulate economic and technological progress but derive much personal satisfaction and well-being from their endeavours.

There is frequent talk about the need to 'upskill' the workforce to ensure sustainable development in knowledge-intensive economies which rely increasingly on the service sector. This upgrading is considered an open-ended process, which starts with a solid basic education and is sustained through lifelong learning. Subject knowledge is rendered obsolete with increasing rapidity by the pace of technological progress. Relevant factual knowledge can be rapidly accessed and transferred with the help of new information and communication technology (ICT). At the same time, the likelihood of anybody staying in the same job, the same economic sector or in paid employment throughout the entire period of working life is becoming increasingly remote.

Faced with EU enlargement, an ageing population, rising migration, increasingly complex career paths, consistently high levels of unemployment and the associated risk of social exclusion, European countries have started to take a closer look at those key competencies likely to be needed by adults in the future. Action must not be limited to defining and identifying the necessary foundation skills. It must extend to determining how and where these competencies should be taught and ensuring that all citizens have access to this teaching. European countries are increasingly concerned to identify the knowledge, skills, competence, abilities and attitudes that will equip their citizens to play an active part in this emerging knowledge-driven society. Efforts to determine the core attributes needed to participate effectively in political, economic, social and cultural activities are being pursued at national and international level. A special focus of this debate is the relationship between the economy and basic education. The effectiveness of the latter in preparing young people for successful economic and social integration is being increasingly questioned.

Concern has been voiced by some that the recent discussion on key competencies is too strongly focused on the workplace and not enough on their importance for a successful personal life. In this context, it is worth recalling that the EU Member States have agreed on the promotion of economic growth and stability together with a high level of employment but also on the strengthening of social cohesion. In line with the first strategic goal, they have initiated

a European Employment Strategy seeking to develop a highly educated, skilled workforce which, as a result of its occupational and geographical mobility, is adaptable to economic change. It is workers with low educational attainments (i.e. less than upper secondary education) that are the most vulnerable in this type of environment. They account for a disproportionately high rate of unemployment while at the same time registering the lowest participation rate in adult training. In 2000, 12.1 % of those with low educational levels were registered as job-seekers compared to an overall average of 8.4 %. During the same period, only 6.1 % of the low-skilled received training compared to 8 % of workers overall (European Commission, 2002a).

The second major concern is the impact of key competencies on social and economic justice. The imbalanced acquisition of key competencies is generally seen as the main reason for social division and the disparities in income that lead to marginalisation and, ultimately, social exclusion. If European countries want to develop the full potential of their human resources, they cannot afford to split their population into the competence-rich and the competence-poor. This also points to the need to reconcile the competitive dimension of a society that promotes excellence, efficiency, diversity and choice, and the cooperative dimension that supports social justice and equality of opportunities, solidarity and tolerance. These two competing requirements are also reflected in some of the human attributes promoted as key competencies, such as self-reliance, risk-taking, initiative and entrepreneurship on the one hand, and teamwork, consideration, solidarity, dialogue and active citizenship on the other.

From knowledge to competence

The Oxford English Dictionary ([1]) defines knowledge as 'the fact of knowing a thing, state, etc or person'. Know-how is defined as the 'knowledge of how to do some particular thing'. Other literature on the subject often refers to 'know-what' for factual knowledge or information and to 'know-how' for operational knowledge or skills.

Lundvall and Johnson (1994) distinguish between four types of knowledge important to the knowledge-based economy: know-what, know-why, know-how and know-who. Know-what refers to factual, codifiable knowledge that is readily transferable. Know-why refers to scientific understanding and the impact of science on mankind. Know-how is the capability of performing certain tasks. Know-who refers to knowing which people possess the necessary know-what, know-why and know-how. The classification of knowledge into 'codified' and 'tacit' knowledge is a recurring topic in the literature on knowledge-based societies. Codified knowledge can be expressed in language or symbols and may as such be stored and/or communicated. Such knowledge can be separated from its bearer, stored and shared with other individuals or organisations. It is generally referred to as information. The rapid expansion of ICT has led to the instant availability and transfer of codified knowledge. Tacit knowledge on the other hand is linked to its bearer and as such not readily transferable. It is the personal stock of knowledge that enables an individual to select, interpret and develop codified knowledge and to put it to meaningful use. Only if knowledge-bearers are conscious of their tacit

([1]) The Shorter Oxford English Dictionary on Historical Principles, 3rd edition. Oxford: Oxford University Press 1973.

knowledge and willing to share it with others will it be made explicit. In the educational context, codified or explicit knowledge is largely represented by subject knowledge, while tacit knowledge is mainly embedded in a learner's personal and social competencies.

In a world in which the stock of factual knowledge is created, distributed and accessed ever more rapidly, people's need to memorise such knowledge is declining. Instead, they need the appropriate tools for selecting, processing and applying the knowledge required to cope with changing employment, leisure and family patterns. This accounts for the growing tendency in education to develop competencies rather than teach factual knowledge.

Many experts in the fields of sociology, education, philosophy, psychology and economics have tried to define the notion of competence. Their efforts have been shaped by their educational and cultural backgrounds as well as their linguistic origins. M. Romainville (1996, pp. 133-141) reminds us that the French term compétence was originally used in the context of vocational training, referring to the ability to perform a particular task. In recent decades, it has found its way into the world of general education where it often refers to a certain 'capacity' or 'potential' for acting efficiently in a given context. It is no longer knowledge itself that counts but the use to which it is put. For P. Perrenoud (1997), the building of competence means enabling individuals to mobilise, apply and integrate acquired knowledge in complex, diverse and unpredictable situations. He suggests the following definition for competence (p. 7): *une capacité d'agir efficacement dans un type défini de situations, capacité qui s'appuie sur des connaissances, mais ne s'y réduit pas* (a capacity to act efficiently in a number of given situations, a capacity based on knowledge, but not limited to it ('unofficial' translation from French by the Eurydice European Unit)). Having analysed many definitions of the notion of competence, F. E. Weinert (OECD, 2001b, p. 45) concludes that across the disciplines 'competence is interpreted as a roughly specialised system of abilities, proficiencies, or skills that are necessary or sufficient to reach a specific goal.' At the Council of Europe's symposium on key competencies, J. Coolahan (Council of Europe, 1996, p. 26) proposed that competence and competencies should be regarded 'as the general capability based on knowledge, experience, values, dispositions which a person has developed through engagement with educational practices'.

The concept of key competencies

Apart from the influence of culture and language, any definition of key competencies is shaped by the scientific background and societal role of the person(s) supplying the definition. A good starting point might be the World Declaration on Education for All: *Meeting Basic Learning Needs* (World Conference on Education 1990). Although not specifically referring to key competencies, Article 1, para. 1 states: 'Every person – child, youth and adult – shall be able to benefit from educational opportunities designed to meet their basic learning needs. These needs comprise both essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning.'

The philosophers M. Canto-Sperber and J-P. Dupuy (OECD, 2001b, p. 75ff) refer to key competencies as competencies indispensable for the good life. Although in their view the good life can take many different forms, its essential feature is the capacity for successful, responsible and productive action at home, in the economy and in the political field. In their view, these competencies go beyond subject-related knowledge and constitute forms of know-how rather than forms of know-that. The anthropologist J. Goody (OECD, 2001b, p. 182) writes that 'the major competencies must be how best to spend one's work and leisure-time within the framework of the society in which ones lives'. The European Round Table of Industrialists (2001), whose key priority is to strengthen Europe's competitiveness, expects the 'new European' to have not just technical skills, but also a spirit of enterprise as an employee and a citizen. Entrepreneurship in this context is to be understood as developing a capacity for creativity, innovation, flexibility, teamwork and intellectual curiosity.

The main conclusion to be drawn from the large number of contributions to this search for a definition is that there is no universal definition of the notion of 'key competence'. Despite their differing conceptualisation and interpretation of the term in question, the majority of experts seem to agree that for a competence to deserve attributes such as 'key', 'core', 'essential' or 'basic', it must be necessary and beneficial to any individual and to society as a whole. It must enable an individual to successfully integrate into a number of social networks while remaining independent and personally effective in familiar as well as new and unpredictable settings. Finally, since all settings are subject to change, a key competence must enable people to constantly update their knowledge and skills in order to keep abreast of fresh developments.

Identification of key competencies

Having established that key competencies are necessary for individuals to lead independent, purposeful, responsible and successful lives, the next step is to identify individual competencies which actually fulfil this requirement. The first criterion for selection is that key competencies must be potentially beneficial to all members of society. They must be relevant to the whole of the population, irrespective of gender, class, race, culture, family background or mother tongue. Secondly, they must comply with the ethical, economic and cultural values and conventions of the society concerned. The next determinant factor is the context in which key competencies are to be applied. No account can be taken of particular lifestyles, but only the most common and likely situations citizens will encounter during their lives. The great majority of adults will at some point in time be workers, learners, parents, carers and participants in any number of political, cultural or leisure activities. The challenge is to make all citizens functional members of these different communities.

There has long been a general consensus in Europe that mastery of the three 'Rs' – reading, writing and arithmetic – is a necessary but insufficient condition for a successful adult life. These skills might be considered the launching pad for all future learning, but they are only part of that area of key competencies generally referred to as literacy and numeracy. The Report on the Concrete Future Objectives of Education and Training systems (European Commission, 2001b) states: 'Ensuring that all citizens achieve an operational level of literacy and numeracy is an

essential precondition to quality learning. These are the key to all subsequent learning capabilities, as well as to employability.'

For the International Adult Literacy Surveys (IALS) ([2]) (OECD 2000 – Introduction, p. X) **literacy** was defined as a particular capacity and mode of behaviour, namely 'the ability to understand and employ printed information in daily activities, at home, at work and in the community – to achieve one's goals and to develop one's knowledge and potential'. In PISA 2000 ([3]), the Programme for International Student Assessment, (OECD 2001c, p. 21) **reading literacy** was defined as 'the ability to understand, use, and reflect on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate effectively in society.' Whilst literacy is considered a key competence in its own right, it is also a gateway to many other competencies. Failure to develop a sufficient level of literacy is considered a major obstacle to social and economic inclusion. On the job market, low literacy skills carry wage penalties and are associated with a higher incidence of unemployment. The IALS report (OECD 2000) also notes the strong association between a country's literacy skills and its economic performance: the larger the proportion of adults with high prose literacy skills (the knowledge and skills to understand and use information from texts), the higher the gross domestic product. In PISA 2000 (OECD 2001c, p. 22), **mathematical literacy** was defined 'as the capacity to identify, understand and engage in mathematics, and to make well-founded judgements about the role that mathematics plays in an individual's current and future private life, occupational life, social life with peers and relatives, and life as a constructive, concerned and reflected citizen… 'Mathematical literacy' is used here to indicate the ability to put mathematical knowledge and skills to functional use rather than just mastering them within a school curriculum'. Both literacy and numeracy are also cross-curricular competencies. The Adult Literacy and Lifeskills Survey (ALL) ([4]) proposes the following definition for **numeracy**: 'the knowledge and skills required to effectively manage the mathematical demands of diverse situations'.

A group of competencies that have attracted a great deal of attention in recent years are **generic skills,** also known as subject-independent or transversal competencies. They are not bound to any specific discipline, but can be applied to a whole range of subject areas and settings. For B. Rey (1996, p. 53), the term 'transversal' does not refer to the elements common to different subject-based competencies but to the additional, subject-independent content of these competencies, which can be of use in other fields. The transferability and flexibility of generic skills makes them invaluable tools for successful action in highly volatile environments where purely subject-related competencies are very short-lived. Some prominent generic skills are communication, problem-solving, reasoning, leadership, creativity, motivation, team-work and the ability to learn. The latter in particular has elicited much interest in recent years within

([2]) IALS were conducted between 1994 and 1998 in 20 countries, using representative samples of the population aged 16 to 65.

([3]) The first phase of the PISA survey was conducted in 2000, among 15-year olds (i.e. young people approaching the end of compulsory education) in 32 countries. It measured students achievements in reading, mathematical and science literacy with a primary focus on reading. The survey will be repeated every three years with the major focus changing between the three domains.

([4]) The ALL survey (by the Educational Testing Service) is planned to provide information on the skills and attitudes of adults aged 16-65 in the following four areas: prose and document literacy, numeracy, analytical reasoning/problem solving, teamwork and ICT literacy. So far 18 countries have confirmed their participation.

the context of lifelong learning. At times of profound economic, political and social change, citizens need to maintain and update their basic knowledge and competencies in line with emerging requirements. This presupposes that they can tell when their knowledge is obsolete, and that they have the initiative and information required to replenish it as appropriate. This implies that they are able to identify suitable places of learning and are sufficiently motivated to invest the necessary time and effort in continued learning. Self-initiated, self-regulated, intentional learning at all stages of life has thus become the key to personal and professional advancement. Within this context, much attention is now focused on the critical role of metacognitive competence, the capacity to understand and control one's own thinking and learning processes. This competence makes people aware of how and why they acquire, process and memorise different types of knowledge. In this way, they are in a position to choose the learning method and environment that suits them best and to continue to adapt them as necessary. Learning becomes a rewarding and enjoyable experience with less risk of disengagement.

Alongside skills and knowledge, attitudes are the third defining characteristic of competence. The Oxford English Dictionary ([5]) defines attitude as 'a settled behaviour or manner of acting as representative of feeling or opinion'. In the educational context, attitudes are most closely associated with **personal competencies** such as curiosity, motivation, creativity, scepticism, honesty, enthusiasm, self-esteem, reliability, responsibility, initiative and perseverance.

Social or **interpersonal competencies** and their role in facilitating personal economic and social integration have been of particular interest to many educational researchers. Their importance for effective participation in any community, especially in multicultural and multi-lingual environments like the European Union, is undeniable. In today's predominantly service-based economies, such skills are also an important measure of a person's employability. They refer to the capacity to develop and maintain private and professional relationships through effective communication, team-work, language skills, and awareness of and respect for other cultures and tradition. A high level of social competence has the added effect of promoting personal competencies like self-esteem, motivation, perseverance and initiative. One particular social competence, namely citizenship, is currently the subject of much interest at national and European level. It is regarded as the informed and active participation of individuals in the community to which they belong. European citizens are members of many communities at local, regional, national and international level, each of which provides them with separate but complementary identities. Civic engagement is based on the knowledge of one's rights and obligations as member of a given community, but also on the confidence and commitment needed to exercise these rights and fulfil one's duties. It involves awareness and respect of the rules and institutions governing life in pluralistic societies. But active citizenship also means a commitment to sustainability as a sign of solidarity with future generations.

Yet further, considerable importance is attached to ICT and foreign languages. Depending on the purpose they are meant to serve, competencies in these fields are classified as academic,

([5]) The Shorter Oxford English Dictionary on Historical Principles, 3rd edition. Oxford: Oxford University Press 1973.

technical, generic or social competencies. Advances in telecommunication and microprocessor technology have expanded, intensified and altered the ways in which people interact. **ICT** has revolutionised business, public administration, education and the home. The magnitude of its economic and social implications has made universal access to computers and the Internet a top priority. With the mass of information available on line, the ability to access, select and administer relevant data is considered a key competence. Computer literacy, meaning the constructive and critical application of ICT, is the key to successful participation in the information society. Proficiency in ICT also serves as a catalyst for literacy, numeracy and many subject-based competencies. Familiarity with the etiquette of text messaging, electronic mail and chatrooms is a social competence for any cyberspace user. Gaps in online access and inadequate ICT competence in parts of the population could have serious repercussions for social cohesion by creating a digital divide into the information-rich and the information-poor.

Competence in **foreign languages** has long been recognised as an indispensable economic and social resource within a culturally and linguistically diverse Europe and beyond. Competence in foreign languages is not limited to technical skill in a particular language but also includes openness to different cultures and respect for others and their competence and achievements. Learning other languages promotes an extended sense of identity, making people feel part of more than one linguistic and cultural community. It also increases people's employment, education and leisure options, which in turn may generate a whole range of personal, social and workplace competencies. The planned enlargement of the European Union can but underscore the importance of language learning.

Mastery of the basic concepts of **science** and **technology** is also often cited as a key competence. PISA 2000 (OECD 2001c, p. 23) defines scientific literacy 'as the capacity to use scientific knowledge, to identify questions, and to draw evidence-based conclusions in order to understand and help make decisions about the natural world and the changes made to it through human activity'. Lack of these skills has serious repercussions on further training and employability in many fields. Ability to understand and apply scientific concepts also promotes development of the generic competencies of problem-solving, reasoning and analysis. By explaining the effect of human activities on nature, it also fosters the ecological awareness necessary for active citizenship.

Acquisition of key competencies up to the end of compulsory education

Having identified certain groups of key competencies, the next step is to decide where, when and how they should be acquired. An obvious choice is through schooling during the period of compulsory education. Although learning throughout life is increasingly considered the responsibility of the individual, society still bears the responsibility for laying the ground and equipping its younger generations with the necessary key competencies. But schools alone cannot provide young people with the full spectrum of key competencies. Informal learning from family, friends, peer groups, the mass media or within youth, political and religious organisations are just as important when it comes to developing cognitive, social and personal competencies. Knowledge and skills acquired through formal teaching can be turned into competence when transferred to informal settings. The same holds true for knowledge and skills learnt outside school which, applied within school, can be transformed into competence.

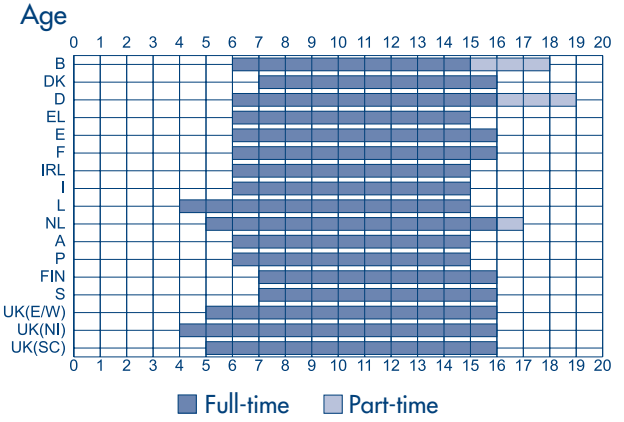
Complementary interaction between schools and their surrounding communities is one of the cornerstones of successful preparation for adult life.

Formal education

As a public service, compulsory schooling endeavours to equip all young learners within a certain age-range with the same set of key competencies to prepare them for effective performance in out-of-school environments. The changing need for competencies in the knowledge-based society has prompted European countries to take a closer look at the length of compulsory education, as well as its teaching content and methods. In all Member States, the end of compulsory education depends on the age of the learner and not a certain attainment level in key competencies.

In the European Union, the period of compulsory education ranges from 9 to 13 years. Some countries switch from full-time to part-time education during the final year(s). In general, compulsory education starts around the age of 6, except in Luxembourg and Northern Ireland, where children as young as 4 enter compulsory education. In short, all children between the ages of 7 and 15 across the European Union are in full-time education. Depending on the country, a certain number of them will already have attended some form of pre-primary institution before starting compulsory education. At the end of primary education, only pupils in Germany, Austria and Luxembourg have to opt for a particular branch or type of secondary education.

FIGURE 1: THE LENGTH OF COMPULSORY EDUCATION IN EUROPE, 2001/2002



Source: Eurydice (based on information contained in *Key Data on Education in Europe 2002).*

Educational objectives enumerate the knowledge, skills and competencies that young people are supposed to have acquired when reaching a certain age or educational level. Curricula

translate these objectives into teaching content, which is almost invariably arranged into subjects or disciplines. Perkins and Salomon (in *Transfer at Risk*) claim that 'education suffers from what might be called a 'disconnected curriculum'. Subject matters are taught in ways encapsulated from one another and sealed off from the lives students live outside of school, not to mention the lives they will live after they have completed their schooling. Partly this is a problem of transfer. But partly, the disconnected curriculum reflects traditions that have become entrenched in educational practice.' The challenge is to organise curricula in such a way as to demonstrate the interrelationship between the substance of different subjects and topics. At the same time, they should convey to pupils the relation between teaching content and real life, showing that learning is a worthwhile exercise.

The final objective of schooling is the preparation of learners for effective functioning in out-of-school settings. This entails the acquisition of knowledge, skills and competencies that can be transferred to real-life situations. Research, however, has shown that many individuals fail to apply knowledge and skills learned in a specific context to novel settings. Lack of this ability prevents even highly knowledgeable pupils from becoming competent adults.

Educational researchers have tried to find answers to a number of questions: How much emphasis should be placed on the acquisition of subject-independent competencies, and how much on the teaching of subject-specific knowledge and competence? Can competence be taught or is it up to the learners themselves to develop competence by combining the right attitude with the knowledge and skills taught? Can cross-curricular skills be taught as separate subjects or must they by their nature be taught as part of other subjects – and, if so, which ones? Should subject-specific knowledge be taught for its own worth, or should it only be used as a vehicle for developing general, transferable competencies? Which teaching methods facilitate and encourage the transfer needed for individuals to take charge of their lives?

During the first half of the 20th century, behaviourism was the dominant approach to teaching and learning. It defines learning as a change in behaviour induced by external stimuli. Instruction transfers knowledge and skills from teacher to learner. Positive reinforcement encourages the desirable response in pupils. During the 1960s, this model was gradually replaced by the cognitivist and constructivist approaches, which share fundamental similarities over and above some important differences. Cognitivism analyses the mental processes that lead to the acquisition of knowledge. The human mind is regarded as an information processor, a view encouraged by the emergence of computers during the same period. Information as input is converted into symbols, processed and stored in memory in a meaningful way. Instruction must therefore create learning environments and develop learning strategies that favour optimal processing. According to constructivism pupils build symbolic representations of knowledge and mental concepts. Learning is not seen as simply adding new representations to prior knowledge and beliefs but as reorganising old knowledge in order to integrate new elements and, subsequently, by constructing new cognitive structures and storing them in memory. Everybody's past experiences differ, as does their way of linking existing knowledge and fresh knowledge. Instruction encourages pupils to actively interpret the world around them and construct their personal knowledge and beliefs by promoting critical thinking skills and inde-

pendent learning. One school of thought of constructivist theory is social constructivism, which stresses the importance of the cultural and social context of learning. Pupils discover and interpret the world around them through active participation in and interaction with it. Teachers no longer control the learning process but facilitate it.

Teaching for transfer demands a shift from teacher-centred to learner-centred teaching methods. Teachers no longer supply knowledge for memorisation but support pupils in their competence-building process. On the basis of prior knowledge and experience, they teach subject-specific knowledge, but also foster creative and critical thinking skills and the ability to learn, by engaging pupils in classroom work. The acquisition of competence calls for involvement on the part of the learner. The role of the teacher is to facilitate learning by guiding pupils in their efforts to apply knowledge and skills to novel situations so that they become competent individuals.

Informal settings

Although schools are the formal environment in which key competencies are taught and learnt, they also offer plenty of informal learning opportunities. Many key competencies, particularly the social and personal ones, can be acquired, practised and reinforced outside lessons. Extra-curricular activities play a major role in this context. Homework is meant to encourage not only the subject-related competencies but also the personal ones such as problem-solving, reasoning, analysis, motivation and perseverance. Family life is one of the major settings for the acquisition and reinforcement of key competencies. Snow and Tabors (1996), in their analysis of the inter-generational transfer of literacy, conclude that parental effects on literacy are numerous and change in line with the child's development phase. They evoke the parental role in the simple transfer of knowledge about print, in developing oral language abilities and in the motivation to pursue literacy.

Apart from school and family, there are many other avenues open to pupils for the acquisition of knowledge, skills and competencies. Many young people join sports clubs, religious, political and other youth organisations or register in a library. The increasing number of TV channels and Internet connections available to pupils at home provides them with plenty of learning opportunities. The Internet can contribute substantially to competence building. It fosters critical thinking skills by requiring learners to select from a mass of information only those items they really need. This forces them to continuously improve their ability to learn and, as such, strongly improves their competence in terms of self-regulated learning. Educational authorities have to consider more closely the level of interaction and cooperation between schools and the very many places offering informal learning opportunities, and provide for the assessment and subsequent certification of competencies acquired in out-of-school environments.

Learning in non-formal environments depends to a large extent on the learner's personal motivation and ability to learn. It is up to the learner to acquire the necessary 'know-who' to find the relevant learning community. In addition, this kind of learning requires and encourages social competence since the learner must build and maintain the necessary relations with the

learning community. It might thus be argued that non-formal learning has greater potential for developing personal and social competencies than formal education.

Assessment and certification of key competencies

In the aftermath of the Second World War and the economic boom of the 1950s and 1960s, European countries became increasingly conscious of human capital (the aggregate knowledge, skills, attitudes and competencies of all citizens) as a major factor in promoting economic growth and national prosperity. The economic downturn and ensuing scarcity of public financial resources during the 1980s forced those countries to increasingly focus on the quality and cost-effectiveness of educational provision. With the growing demand for accountability, pupils attainment started to be used as an indicator of a school's effectiveness in providing younger generations with the necessary knowledge, skills and competencies. Assessment results serve a number of different purposes. Educational authorities use them to monitor the quality of their educational provision, to recognise and possibly certify the achievements of pupils, and as an indicator of whether educational targets and standards have been achieved. Potential employers rely on the certification of key competencies to help them select candidates for recruitment and in-service training. As far as the pupils are concerned, certification or selection based on examination results exerts considerable power over their lives by influencing their prospects on the job market and in further education. Assessment results also serve as yardsticks for individuals, schools, and education systems with which to measure the performance of pupils against their peers.

Certain authors highlight the weaknesses of traditional examination systems. Tests are often seen as excessively geared to the recall of information and to producing the 'correct' answer, rather than the application of knowledge with the help of critical and creative thinking skills. Since teachers and pupils have a reasonable idea of likely exam questions, there is a danger that teaching and learning are narrowed to those aspects of the curriculum that are most likely to be tested in examinations. The undesirable result of this is that factual knowledge is learnt and memorised in order to pass exams, and not so that it can be mobilised for use in adult life. Qualifications and certificates awarded on the basis of these exams simply reward successful recall of knowledge at a particular point in time, or certify completion of a specific educational level. The type of assessment therefore exerts a major influence on content and methods employed for teaching and learning.

In order to be assessed, pupils must demonstrate knowledge, skills or competencies through performance, and this performance must be measurable. According to M. Romainville (2000) assessing a competence basically means establishing inference. The evaluator has to infer from a given performance the likelihood that a specific pupil has developed a certain competence. M. Kalika (Institut de la Méditerranée 1998, p. 122) makes the distinction between *compétences potentielles* (potential competencies) and *compétences constatées* (stated competencies). Only the latter group can be tested and accredited while, in the case of the first group, it is only possible to testify to an individual's potential to develop these competencies. Faced with such difficulties, exams tend to concentrate on the testing of knowledge as a much easier measure of what pupils have achieved.

In knowledge-based societies, education is considered to be one of the major agents for economic and social advancement. It follows that improving – or at least maintaining – educational standards is a top priority of educational policy. To inform the debate on how to enhance learning outcomes while containing cost, countries started looking more closely at practices in other countries within and outside Europe. An increasing number of cross-national comparisons of pupil attainment in core subjects and key competencies with a varying number of participants were conducted under the auspices of the International Association for Educational Achievement (IEA) and the Organisation for Economic Cooperation and Development (OECD).

Indicators and Benchmarks

Educational indicators are intended to give policy-makers some indication or better understanding of significant aspects of education systems. For statistics or other data to serve as indicators, they must be compared to some reference point (such as an educational standard, a previous measurement of the aspect in question, or the performance of another educational establishment or system). The final measure of the effectiveness of compulsory education in developing key competencies is their successful transfer to out-of-school settings. Schools are able to assess the knowledge and skills of pupils but not necessarily their competencies. Examination results should not therefore be considered as an absolute measure but rather as an indicator for the acquisition of key competencies. It is the individual's performance at the workplace and in private life that will provide ultimate proof of the effectiveness of formal and informal learning channels.

Due to the heightened emphasis on quality and cost-effectiveness of education, indicators increasingly inform debate and decisions on educational reform in all Member States. They are powerful instruments in the hands of policy-makers. They must be interpreted with care, taking into account all input (e.g. pupils' characteristics) and process variables (e.g. teaching methods) that influence outcomes. Indicators and benchmarks raise awareness, provide a focus and stimulate pupils, teachers, schools and the educational system to improve performance.

Benchmarking as a tool for quality improvement has only recently entered the realm of public service. It was developed in the world of business where companies started investigating the practices of high-performing competitors in order to learn what made them so successful. The European Benchmarking Code of Conduct defines benchmarking as 'the process of identifying and learning from best practices in other organisations'. In education, it is generally the relevant public authority that, with the help of indicators, identifies best practice at home or abroad, applying criteria that meet specific requirements. The next step is to analyse how the benchmarking partner has been able to achieve best practice and whether the same process can be transposed into the home environment. The final step is to create the necessary conditions for implementing the benchmarked performance. Closing the gap however, does not put an end to the benchmarking exercise. The identification of best practice must remain an ongoing process.

Developments at international level

In their response to the survey, many countries reported that their approach to curricular design and their regard for key competencies have been influenced by developments at EU and international levels. In March 2000, at its Lisbon European Council, the European Union set itself the new strategic goal of becoming 'the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion' (European Council 2000, paragraph 5). In February 2001, in line with this mandate, the Education Council adopted the report *The concrete future objectives of education and training systems* (European Commission 2001b) which identified three such strategic objectives and 13 associated objectives for the next 10 years (for further details see Annexe 1). A detailed work programme for the implementation of these objectives was adopted in February 2002 (Council of the European Union 2002).

The Lisbon European Council also called upon the Member States, the Council and the Commission to establish a European framework defining 'the new basic skills to be provided through lifelong learning: IT skills, foreign languages, technological culture, entrepreneurship and social skills' (European Council 2000, paragraph 26). The Stockholm European Council of March 2001 confirmed the importance of these issues and defined the improvement of basic skills, ICT and mathematics, sciences and technology as priority areas. The Commission set up a working group of experts designated by the Member States for each of the three priority areas mentioned above. After a series of meetings in the autumn of 2001 and spring of 2002, the group on basic skills suggested the following eight principal domains of key competencies (European Commission 2002c):

- communication in the mother tongue,
- communication in foreign languages,
- ICT,
- numeracy and competencies in maths, science and technology,
- entrepreneurship,
- interpersonal and civic competencies,
- learning to learn,
- general culture.

The Barcelona European Council of March 2002 reiterated the EU call for further action in the field of basic skills. Foreign languages and digital literacy were singled out as two key competencies deserving greater attention. In particular, the Council announced its support for the teaching of foreign languages from an early age and the general introduction of an Internet and computer user's certificate for secondary school pupils. In addition, it called for the promotion of the European dimension in education and its inclusion in work on basic skills by 2004.

In the meantime, many EU policy papers, programmes and actions were concerned with the identification and promotion of key competencies. As a result of the close relation between education and training, and employment, action in the area of key competencies is an integral part of both European cooperation in education and the Community employment policy. One of the first papers was the White Paper on education and training (European Commission 1996) which, in its initial general objectives for the learning society, proposed the establishment of a European system for comparing and widely circulating the definitions of 'key skills' and the best ways of acquiring, assessing and certifying them. It challenged the commonly accepted use of paper qualifications to testify to the acquisition of a given body of skills at the end of general education. It suggested supplementing this system with the possible certification of individual or partial skills. The Memorandum on Lifelong Learning (European Commission 2000b) in its Key Message 1 called for new basic skills for all. New basic skills were defined as skills required for active participation in the knowledge society and economy. Although the memorandum drew attention to the new basic skills as outlined in the Lisbon European Council Conclusions, it also stressed the importance of the traditional foundation skills of literacy and numeracy. A high quality basic education was presented as the essential foundation for sustained participation in the knowledge society with particular reference to the competence of 'learning-to-learn'.

ICT skills are at the centre of the eLearning imitative which has so far resulted in two action plans. The main objective of eEurope 2002 (Council of the European Union 2000) is to connect all schools to the Internet and improve their access to multimedia resources. The recently adopted eEurope 2005 action plan (European Commission 2002b) goes beyond the concern for access and aims at improving the digital literacy rate with the help of on-line public services, including education.

European efforts to develop a coordinated employment policy have led to the establishment of the Employment Strategy based on the 'processes' of Luxembourg, Cardiff and Cologne. It involves coordination of national employment strategies in the form of annually issued employment guidelines. Those for 2001 (Council of the European Union 2001) have the following to say about skills development for the new labour market in the context of lifelong learning: 'Members States are therefore called upon to improve the quality of their education and training systems, as well as the relevant curricula, …, in order to equip young people with the basic skills relevant to the labour market and needed to participate in lifelong learning; reduce youth and adult literacy…'.

The Commission Action Plan on Skills and Mobility (European Commission 2002a) calls for education and training systems to become more responsive to the labour market. It recommends free access for all citizens to the acquisition of key skills, including literacy and numeracy, as well as mathematics, science and technology, foreign languages, 'learning-to-learn', cultural awareness, social/personal skills, entrepreneurship, and technological culture (including ICT skills).

Within a broader international context, the International Association for Educational Achievement (IEA) and the Organisation for Economic Cooperation and Development (OECD) have been most influential in defining and assessing (key) competencies. In knowledge-based societies, education is considered one of the major agents for economic and social advancement. It follows that improving, or at least maintaining, educational standards is a top policy priority. To inform the debate on how to raise pupil learning outcomes while keeping costs within reasonable limits, countries started in the 1960s to look more closely at practices in other countries. An increasing number of cross-national comparisons of pupil attainment in core subjects and key competencies, in which a variable number of participants took part, were carried out under the auspices of the IEA and the OECD.

Figure 2 illustrates the increase in number and diversity of these international surveys in recent decades. Internationally designed tests must be culturally neutral and meaningful in any of the languages involved. For this reason, the exact sciences and the language of instruction are more amenable to international comparison than social, civic or personal competencies which are strongly shaped by the particular society concerned. The subjects and competencies selected for these surveys, as well as the frequency of their assessment, reflect this difficulty. PISA 2000 was the first international survey to also assess cross-curricular competencies, such as student motivation, other aspects of student attitudes towards learning, familiarity with computers and self-regulated learning. Further PISA studies aim to continue this practice by examining problem-solving skills and skills in ICT.

Figure 2: Involvement of EU Member States in large-scale international studies on educational attainment since 1960

International assessment survey		Conducted by	Reference year	Knowledge, skills and competencies surveyed	Age group concerned	B fr	B de	B nl	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK (E/W/NI)	UK (SC)
FIMS	First International Mathematics Study	IEA	1964	Mathematics	13, pre-university students	●	●	●		●			●				●			●	●	●	●
FISS	First International Science Study	IEA	1970-71	Science	10, 14, terminal secondary students	●		●		●			●		●		●			●	●	●	●
	Study of Civic Education	IEA	1971	Civic education	10, 14, terminal secondary school students					●				●	●		●			●	●		
SIMS	Second International Mathematics Study	IEA	1980-82	Mathematics	10, 13, terminal secondary school students	●		●					●			●	●			●	●	●	●
SISS	Second International Science Study	IEA	1983-84	Science	10, 14, terminal secondary school students										●		●			●	●	●	
IAEP-1	International Assessment of Educational Progress	Educational Testing Service	1988	Mathematics, Science	13							●		●								●	●
COMPED	Computers in Education	IEA	1989 and 1992	Information and Communication Technology (ICT)	10, 13, penultimate year of secondary education	●		●		●	●	●	●		●	●	●	●	●				
RLS	Reading Literacy Study	IEA	1990-91	Reading literacy	9, 14	●			●	●	●	●	●	●	●		●		●	●	●		
IAEP-2	International Assessment of Educational Progress	Educational Testing Service	1991	Mathematics, Science	9, 13							●	●	●								●	●
TIMSS	Third International Mathematics and Science Study	IEA	1994-99	Mathematics and Science	9, 13	●		●	●	●	●	●	●	●	●		●	●	●	●	●	●	●
IALS	First International Adult Literacy Survey	OECD, Statistics Canada	1994	Literacy	Adults 16-65					●							●				●		

Source: Eurydice.

Figure 2 (continued): Involvement of EU Member States in large-scale international studies on educational attainment since 1960

International assessment survey		Conducted by	Reference year	Knowledge, skills and competencies surveyed	Age group concerned	B fr	B de	B nl	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK (E/W/NI)	UK (SC)
CIVED	Civic Education Study	IEA	1994-2002	Civic Education	14, 16-18	●			●	●	●				●		●		●	●	●	●	
IALS	International Adult Literacy Survey	OECD, Statistics Canada	1996-98	Literacy	Adults 16-65			●	●	●				●	●		●			●		●	●
TIMSS-R	Third International Mathematics and Science Study Repeat	IEA	1997-2000	Mathematics, Science	9, 13			●	●		●	●	●	●	●		●	●	●	●		●	
PIRLS	Progress in International Reading Literacy Study 2001	IEA	1999-2003	Reading literacy	9, 10					●	●		●		●		●				●	●	●
PISA	Programme for International Student Assessment	OECD	2000	Reading, mathematics and science literacy, Cross-Curricular Competencies (CCC)	15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
TIMSS	Trends in Mathematics and Science Study 2003	IEA	2000-04	Mathematics, Science	9, 13			●	●		●	●			●		●				●	●	●
ALL	Adult Literacy and Lifeskills Study	OECD, Statistics Canada	2001-02	Literacy, Numeracy, Analytical Reasoning/Problem-solving, Teamwork, ICT literacy	Adults 16-65			●							●		●	●					
PISA	Programme for International Student Assessment	OECD	2003	Mathematics, reading and science literacy Cross-Curricular Competencies (CCC)	15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PISA	Programme for International Student Assessment	OECD	2006	Science, mathematics and reading literacy Cross-Curricular Competencies (CCC)	15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

Source: Eurydice.

NB:
- Although National Units have made every effort to check the information contained in this figure, its accuracy cannot be guaranteed in all cases because occasional difficulty in obtaining official confirmation from all sources involved.
- All information on participation in IEA studies till 1990 is based on information published by the International Association for the Evaluation of Educational Achievement (1995).

Additional notes

Belgium: At the time of the FIMS study, education was still the responsibility of the central state.
United Kingdom (E/W/NI): England was involved in all studies marked. Wales participated in IALS (1997). Northern Ireland was included in IALS (1997) and PISA (2000). Information is not available on the participation of Wales and Northern Ireland prior to 1994.
Netherlands: Participated in Phase 1 (qualitative case studies) of CIVED only.

ANNEXE 1

THE CONCRETE FUTURE OBJECTIVES OF EDUCATION AND TRAINING SYSTEMS IN THE EUROPEAN UNION

Strategic objectives	**Associated objectives**
Objective 1 Increasing the quality and effectiveness of education and training systems in the European Union	1. Improving education and training for teachers and trainers 2. Developing skills for the knowledge society Increasing literacy and numeracy Updating the definition of basic skills for the knowledge society Maintaining the ability to learn 3. Ensuring access to ICTs for everyone Equipping schools and learning centres Involving teachers and trainers Using networks and resources 4. Increasing the recruitment to scientific and technical studies 5. Making the best use of resources Improving quality assurance Ensuring efficient use of resources
Objective 2 Facilitating the access of all to education and training systems	1. Open learning environment 2. Making learning more attractive 3. Supporting active citizenship, equal opportunities and social cohesion
Objective 3 Opening up education and training systems to the wider world	1. Strengthening the links with working life and research, and society at large 2. Developing the spirit of enterprise 3. Improving foreign language learning 4. Increasing mobility and exchanges 5. Strengthening European cooperation

Initial findings of the survey

The purpose of this survey was to provide national and European players with up-to-date information on the definition and identification of key competencies in the EU Member States. In order to learn about each country's perception of this concept and to demonstrate the wide range of differing characteristics and terminology associated with it, no firm definition of 'key competence' was included in the questionnaire. The only broad recommendation to the participating countries was that they should interpret the notion of 'key competence' as a set of knowledge, skills and attitudes essential for all individuals to lead purposeful lives as active members of society.

The totally opposite approach to the survey would have been to supply Member States with a predetermined list of key competencies in order to see whether their education systems supported their development. However, this approach was rejected not least because an agreed list of this kind is still not available within the EU. However, given the heightened interest in key competencies and the intense commitment of the working group set up by the European Commission to identify them in accordance with a common definition, such a common European framework might materialise in the near future. If so, it might then be appropriate to consider the feasibility of conducting a follow-up survey based on an agreed list.

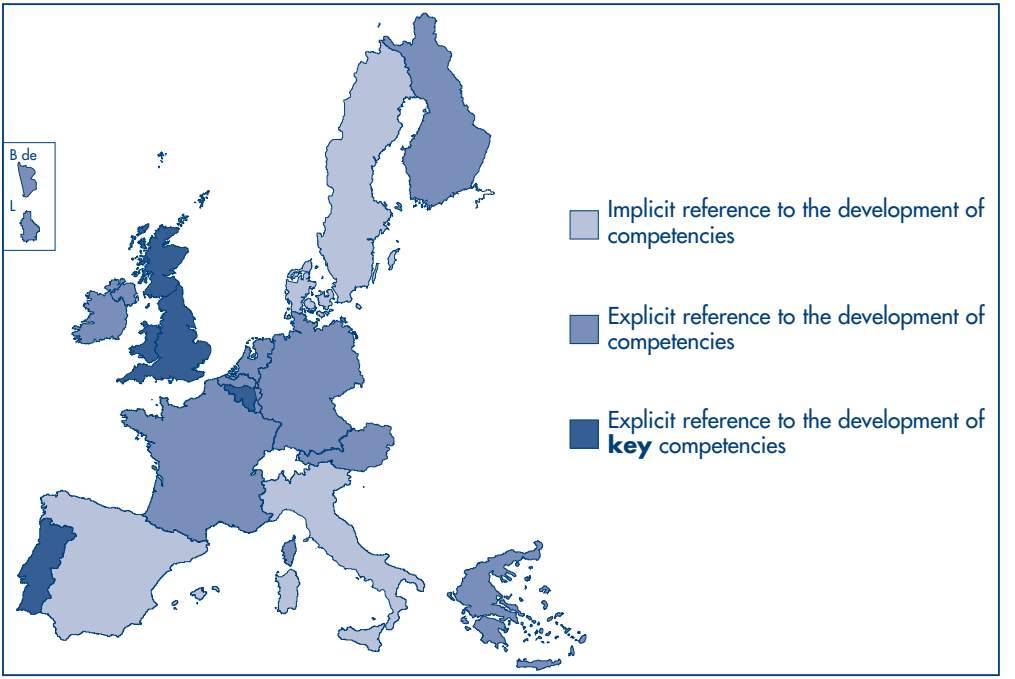
The survey showed that identification of (key) competencies was as much a question of terminology as of conceptualisation. Examination of the educational goals expressed in the curricula of general compulsory education showed that all of them included either implicit or explicit references to the development of competencies. An implicit reference means that the curriculum specifies the body of knowledge, skills or attitudes to be imparted without actually using the term 'competence'. In contrast, curricula that make explicit reference to competencies do use the term. The number of competencies to be developed varies greatly between countries and can run into double figures. However, a handful of countries have formulated educational goals which incorporate the development of a more limited number. These competencies are regarded as essential in order to participate effectively in society. In general, they are referred to as 'key competencies' but many other terms are also used. The fact that some countries do not employ this term – or a closely similar one – must not be taken to mean that their education systems are not concerned with such competencies. Several countries in which the term 'key competence' is not part of educational terminology have nevertheless identified a select list of competencies whose development is considered of paramount importance. However, the current survey focuses primarily on those competencies actually identified as 'key competencies' by the countries in question.

Centrally established curricula in all participating countries state what they consider to be the general and subject-specific objectives of education. Typically, educational aims refer to the intellectual, emotional and physical development of pupils, and as such are the dominant influence on curricular content and teaching practice. Some countries express their aims in terms of what the education system, represented by schools, should do to support this development. Others formulate educational aims from the standpoint of pupils, specifying the knowledge, skills and competencies that should be acquired on leaving school. Although educational

objectives are often expressed in very general terms, it is possible to identify three distinct focal points:

- Acquisition of knowledge, skills, abilities or capacities. There is no explicit reference to competencies, although their development is addressed implicitly.
- Development of competencies, i.e. the ability to apply the knowledge and skills imparted by education to real-life situations.
- Development of key competencies, i.e. those that are essential in order to participate effectively within society.

FIGURE 3: THE WAY IN WHICH CURRICULA IN EU MEMBER STATES ADDRESS THE DEVELOPMENT OF COMPETENCIES IN GENERAL COMPULSORY EDUCATION, REFERENCE YEAR 2002



Source: Eurydice.

Motivation for focusing on key competencies in the curriculum

The survey revealed that concern for the quality of education, in terms of process and outcome, was the prime motive for focusing curricular attention on key competencies. This concern stems from the fact that educational attainment varies from school to school. In order to cover as many aspects of pupils' intellectual and emotional development as possible, educational goals are often expressed in rather general terms. Their interpretation and implementation have traditionally been the task of teachers who are generally also responsible for the choice of

teaching and assessment methods. In recent decades, the resulting differences in the educational achievements of schools have caused concern in the world of work and further education.

Other motivating factors are the growth of internationalisation, rapid scientific and technological progress, especially in information and communication technology, and increasingly complex career paths. All countries agree that, in order to face these challenges and avert the dangers of social exclusion, people must be prepared for lifelong and 'life-wide' learning. Curricula have therefore come to focus more on the successful application of knowledge and skills than on their transmission. As a result, most education authorities have redefined their educational aims in terms of competencies. Developing the capacity to apply knowledge and skills increases their transfer value. Consequently, learning becomes more attractive and beneficial for the individual and society. With this logic in mind, some education systems have recently focused their attention on competencies with the highest transfer value. Applicable to a maximum number of real-life situations, they are potentially beneficial to everybody.

The concept of key competence in general compulsory education

The survey confirmed that delivery of basic or key skills was traditionally the preserve of vocational education. However, it also revealed that, during the past decade, about half the EU countries have recognised the importance of key skills development for all pupils irrespective of the type of education they receive. As a consequence, the concept has been increasingly extended to general education. Since the term 'skills' still tends to be associated with vocational education, some countries prefer to use the term basic or key 'competencies' within the context of general education.

So far, four education systems have fully integrated the development of key competencies into their curricula for general compulsory education. A further six devote attention to key competencies in policy papers or public debate and consider whether it might not be appropriate for them to play a greater role. The remainder do not envisage any change in their curricula which refer, either implicitly or explicitly, to competencies in general rather than to key competencies.

Acquisition of key competencies as an aim of general compulsory education

It is only recently, that education systems have begun to make explicit reference to the development of key competencies in curricula for general compulsory education. So far, there are examples within four education systems. In 1997, the French Community of Belgium made key competencies a curricular priority. The same year, it passed the 'Missions' Decree specifying the transversal and subject-specific basic competencies to be attained by all pupils in general compulsory education. In England and Wales, the 1995 revision of the National Curriculum reduced the mandatory content of the curriculum. One of the aims of this change was to give schools the opportunity to devote more time to develop the key skills of Communication, Application of Number and Information Technology. However, it was the 2000 revision that highlighted the opportunities for developing these skills, together with the wider key skills – Working with Others, Improving Own Learning and Performance, and Problem Solving. Core Skills had featured in discussions on Scottish education since the late 1970s but it was not until 1994 that they were articulated clearly. Originally intended only for upper secondary education,

FIGURE 4: THE CONCEPT OF KEY COMPETENCIES IN THE TERMINOLOGY OF GENERAL COMPULSORY EDUCATION ACROSS THE EU, REFERENCE YEAR 2002

Country/Education system	Terms used	Definition
Education systems which have integrated key competencies into their curricula		
B fr (1997)	*Socles de compétences* (competence thresholds) *Compétences terminales et savoirs requis* (final competencies and required know-what and know-how)	Transversal and subject-specific competencies whose mastery is considered necessary for social integration and the pursuit of further studies.
P (2001)	*Competências essencias* (essential competencies)	The body of general and subject-specific knowledge and skills considered essential for all citizens in today's society.
UK (E/W) (2000)	Key skills	Generic skills which individuals need in order to be effective members of a flexible, adaptable and competitive workforce and for lifelong learning.
UK (SC) (2000)	Core Skills	Broad, transferable skills that people need to be full, active and responsible members of society.
Education systems which are publicly debating whether key competencies should be integrated into their curricula		
B de	*Schlüsselkompetenzen* (key competencies)	Subject-specific competencies which have to be attained by every pupil.
B nl	*Sleutelcompetenties* (key competencies)	Competencies that are transferable (applicable in many situations and contexts) and multifunctional (which can be used to achieve several objectives, solve different problems and accomplish different tasks).
D	*Schlüsselkompetenzen* (key competencies); *Basiskompetenzen* (basic competencies); *Schlüsselqualifikationen* (key qualifications)	Cross-curricular and subject-specific competencies which represent a logically consistent set of attitudes, values, knowledge and skills indispensable for operating effectively both personally and professionally.
L	*Compétences de base* (basic competencies)	The knowledge and skills enabling children to engage in subsequent learning and study.
A	*Grundkompetenzen* (basic competencies)	The term has yet to be defined.
UK (NI)	Key transferable skills	Generic skills which individuals need in order to be effective members of a flexible, adaptable and competitive workforce and for lifelong learning.

Source: Eurydice.

N.B.: The above table includes only those countries in which 'key competencies' or a broadly equivalent term has been accepted as part of the terminology of general compulsory education.

the concept of 'Core Skills' was extended to other areas of the education system in 2000. Finally, in 2001, after broad debate, Portugal restructured its national curriculum around essential competencies which comprise general competencies, a wide range of subject-specific competencies and the learning experiences that should be provided to all pupils.

The formally stated objectives of most education systems in the EU refer explicitly to the development of competencies rather than key competencies. However, just over half of the authorities concerned have initiated discussions on the advantages and feasibility of focusing attention on a small core of key competencies. The German-speaking Community of Belgium seems to have made most progress in this respect. In the summer of 2002, it submitted to parliament a selection of key competencies to serve as a basis for the next generation of curricula. The Flemish Community of Belgium has been engaged in a similar process but a public debate on the final selection of key competencies has yet to take place. Current trends in German educational policy reflect a strong interest in the further implementation of the concept of key competencies. Pilot projects in all Länder test educational strategies which combine the identification and acquisition of cross-curricular and subject-specific (key) competencies. Representatives of both the *Bund* and *Länder* are involved in identifying the competencies essential for lifelong learning and effectiveness. Austria is yet another country looking for new ways of interpreting its curricula (which are expressed in rather broad terms) with the intent of making key competencies a top priority. Different types of secondary schools employ essentially the same curricula, but set very different standards. As a result, the competence level achieved by secondary school leavers can vary considerably. A steering group has now been made responsible for identifying the subject-specific knowledge and competencies that could serve either as benchmarks or as minimum standards for the subjects in question. In Northern Ireland, proposals currently under consultation include a restructuring of the key stage 4 curriculum (14- to 16-year-olds) to include development of six key transferable skills. Finally, Luxembourg has made it known that any changes in its educational aims would certainly be structured around basic competencies that all learners should acquire.

Curricula in Greece, France, Ireland, the Netherlands and Finland all refer to the development of competencies but none intends to single out any of them as key competencies. The Netherlands is especially noteworthy in this respect. Following lengthy discussions, it has deliberately decided not to include the term 'key competence' in the educational targets set for 2004 onwards. Rejection of the term is based on the fear that excessively narrow attainment targets might undermine the autonomy of schools. However, this decision should be seen in perspective. The six clusters of attainment targets in the curriculum are very similar to what many educationalists would describe as key competencies. In Greece, the law stresses the importance of balanced personal development and attaches considerable importance to general competencies. France does not recognise the concept of key competence in general compulsory education, but insists on the priority status of one particular competence, namely 'proficiency in language skills and the French language'. No other competence carries as much weight as 'language skills', which must be interpreted broadly as the ability to express oneself and to communicate in a wide variety of ways. The current culture of schooling in Ireland seems to strike a fine balance between the transmission of knowledge and skills and the development of competencies.

The general trend in current debate, however, is to focus more on competencies such as higher order thinking skills and problem-solving, without however referring to them as key competencies. In Finland, the educational targets relating to competencies stated in the legislation and the national core curriculum are specified in curricula drawn up at local level.

The remaining four countries refer implicitly rather than explicitly to competencies in their curricula. In Spain, the term 'competence' does feature in the context of employment but not in general education, in which the term 'ability' is used to refer to the educational outcomes of general compulsory education. The Autonomous Community of Catalonia has been alone in trying to identify a list of basic competencies for compulsory education. A recently published study examined how the abilities listed in the core curriculum could be rearranged into key areas. Sweden has clearly stated that all its educational goals are considered important and that no change of policy is intended. While there is reference to the acquisition of knowledge and the development of democratic, social and civic behaviour, the development of competencies is not a firmly specified aim of education. Nevertheless, it is clearly stated that pupils should attain mastery of both Swedish and basic mathematical concepts. Italy and Denmark are the only countries in this group considering change. At the end of the 1990s, Italy had a lively discussion on whether educational goals should explicitly refer to the development of competencies. Moreover, the new Draft Law on General Norms and Standards makes explicit reference to the progressive acquisition of competencies. Denmark is currently taking stock of the competencies available in its human capital and listing them in the so-called National Competence Account. The project will run until 2003 and the findings will serve as a basis for establishing which competencies are to be regarded as essential for all citizens.

Identification and selection of key competencies in general compulsory education

As stated above, the development of key competencies is a curricular feature in four out of all the education systems under consideration. A further six are examining whether it would be appropriate to integrate the development of key competencies into their general education curricula. Identification of these competencies is above all a question of educational priorities

FIGURE 5: IDENTIFICATION OF KEY COMPETENCIES IN GENERAL COMPULSORY EDUCATION ACROSS THE EU, REFERENCE YEAR 2002

	General key competencies only	Subject-specific key competencies only	General and subject-specific key competencies
Education systems in which key competencies are embedded in the curricula	**UK (E/W,SC)**		**P, B fr**
Countries debating whether key competencies should be integrated into the curricula	**B nl, UK (NI)**	**B de**	**D, A, L**

Source: Eurydice.

but also one of terminology. The most striking difference between countries seems to be the type of competencies – general ([6]), subject-specific or both – that they regard as 'key competencies'. For all types to qualify as such, they must be transferable to contexts other than the one in which they were acquired. General key competencies are developed with the help of many subjects, while subject-specific ones (as their name suggests) are best developed via one particular subject.

In the United Kingdom, a limited number of skills are highlighted as key competencies (six key skills in England and Wales and five Core Skills in Scotland), as they help learners to improve their learning and performance in education, work and life. These key competencies complement the wide range of general and subject-specific skills which pupils are expected to develop. Both education systems identify key competencies as being generic rather than subject-specific skills. The Flemish Community of Belgium likewise plans to include only general competencies in its future selection.

At the other end of the spectrum is the German-speaking Community of Belgium. In its current proposal, the Community considers only subject-specific competencies as key competencies, excluding general ones from its selection. Furthermore, the Community's definition of key competencies presupposes their full acquisition by all pupils. Proof of acquisition, however, is only possible if the competence is measurable, a concern which prompted the Community's decision to exclude general competencies from its selection. Nevertheless, an important part of the proposed curriculum includes development of the following subject-independent competencies: meta-cognitive skills, emotional and social skills, civics, health, environmental and ICT competencies, and entrepreneurship. For the reasons stated above, however, they were not considered to be key competencies.

The French Community of Belgium and Portugal rely on both general and subject-specific key competencies, but differ in the way they present them. The Portuguese curriculum first discusses the ten general key competencies which are of a transversal nature, and then lists the compulsory subjects and the specific key competencies they are meant to support. The French Community of Belgium, in contrast, links both the general (or what the Community calls 'transversal') key competencies and subject-specific key competencies to particular subjects. Although not yet ready to make a final selection, Germany, Austria and Luxembourg also seem set to include both general and subject-specific competencies within their key competencies.

All the education systems which have already integrated key competencies into their curricula have included a certain number of general competencies in their selection. Subject-specific competencies, by contrast, are included in only two. The common denominator therefore corresponds to general key competencies, of which only three – communication, working with others and problem-solving – could be identified in each of the four education systems concerned.

([6]) The terms 'general', 'cross-curricular', 'transversal', 'intercurricular' and 'subject-independent competencies' as well as 'generic skills' are all used as synonyms in this text.

Communication refers to the use of language (mother tongue and foreign languages) in oral and written form, and the ability to structure and express one's own thoughts and listen to others. **Working with others** covers not only the capacity to cooperate with other people but also the ability to organise one's own activities in a way that facilitates interpersonal relationships. **Problem-solving** refers to the capacity to analyse problems, plan solutions, take decisions and evaluate the outcome.

Numeracy, on the other hand, is considered a general key skill solely in the United Kingdom (England and Wales, and Scotland). Mathematical competence is among the subject-specific key competencies of the French Community of Belgium and Portugal, although its 'transversal' nature is reflected in its importance for problem-solving, reasoning and communication. The United Kingdom (England and Wales, and Scotland) also considers the use of **information and communication technology (ICT)** to be a key skill. Portugal, in contrast, does not classify ICT as a self-contained key competence, but as a transversal tool for the development of general and subject-specific competencies, mainly associated with 'information processing' (investigating, selecting and organising information in order to transform it into knowledge that can be mobilised). Neither is ICT regarded as a key competence in the French Community of Belgium which, however, declares it to be a tool for development and greater autonomy. 'Learning to learn' is considered a separate key competence solely in England and Wales and in Portugal, which refer to it as 'Improving Own Learning and Performance (IOLP)', and 'Adopt personalised working and learning methodologies geared to achieving set objectives', respectively. Scotland does not explicitly list **'learning-to-learn'** as a Core Skill, but refers to it implicitly under problem-solving. In the French Community of Belgium, 'learning-to-learn' is represented by several transversal competencies each of which is associated with a different subject. Portugal and the French Community are alone in considering the ability to **'take charge of one's own physical well-being'** as a general key competence. For the French Community, this competence is developed solely during physical education classes. Portugal applies a somewhat broader definition by adding references to the enhancement of health and the quality of life.

All abilities, skills and competencies listed above are also referred to implicitly or explicitly in the curricula of the remaining EU countries. Generally, mastery of the mother tongue and development of communication skills rank highly among the abilities to be developed. This applies particularly to France in which language and communication are considered of paramount importance for effective functioning in society. The need to impart a basic understanding of mathematical concepts is another concern expressed in all curricula. So is the development of social and personal skills and of the ability to learn. Finland is at the forefront of research into 'learning-to-learn', which most educationalists would regard as a, if not the, key competence. Finnish researchers have made a pioneering contribution to the definition of the concept and to developing appropriate instruments for its assessment.

Support for the development of key competencies during compulsory general education

The survey provided the following information on how Member States support the acquisition of key competencies. The French Community of Belgium, Portugal and the United Kingdom

(England and Wales, and Scotland) incorporate the development of key competencies into the whole of compulsory education. Key skills are generally developed through the teaching of specific subjects or subject areas, and national curricula (national guidelines in Scotland) explain how key competencies are embedded in those subjects. All four education systems also highlight the importance of educational activities outside the classroom and, despite differences in the competencies selected, all four rely on basically the same set of compulsory subjects for their delivery. The same applies to the remaining countries in which curricula refer (explicitly or implicitly) to the development of competencies, rather than key competencies. They too reported almost identical sets of compulsory subjects. Despite differences in the time allocated to individual subjects, the following are compulsory for at least part of general compulsory education in all countries within the EU except Scotland: the mother tongue, mathematics, foreign languages, physical education, arts, and human and natural sciences. In Scotland, the only subject compulsory by law is religious education, but national guidelines recommend provision of all subjects in the foregoing list. Religious education or ethics is mandatory in all EU Member States except Spain ([7]) and France. Finally, the teaching of ICT is mandatory in all countries, although about half of them regard the use of ICT as a transversal skill to be developed through the teaching of other subjects. In the late 1990s, England underlined its commitment to key skills development by introducing daily dedicated classroom time devoted to literacy and numeracy in primary education.

All countries place considerable trust in teachers when it comes to implementing educational goals. Education authorities issue mandatory requirements as far as the content of teaching is concerned, but generally provide no more than guidance in relation to teaching methods. Curricula require the acquisition of a solid foundation of knowledge and, either implicitly or explicitly, also require development of the ability to apply both knowledge and skills. All education systems under consideration favour teaching methods that encourage an active and creative attitude to learning, the development of critical thinking skills, learning by doing and a collaborative effort between learners and teachers.

Measurement and assessment of key competencies

As explained above, concern for the quality of education was cited as the main motivation for increasing the emphasis on key competencies in the curriculum. Learner attainment in the form of knowledge, skills and (key) competencies is the measurable output that provides an indication as to the quality of education. As a general rule, the assessment of educational outcomes at the end of compulsory education is only concerned with measuring the extent to which pupils have assimilated the educational provision of schools. The qualifications system in the United Kingdom has a broader scope. GCSEs and other qualifications taken at the end of compulsory education are not restricted to a particular age group. They are also available to assess and certificate subject knowledge and skills, including key competencies, at any age. In Scotland, every standard grade and national course has been audited to establish its Core Skills content. In addition, the system provides for the certification of individual Core Skills. Depending on their ambitions and capabilities, young people are thus able to build up their personal Core

([7]) Schools must offer religious education, but pupils may take it on a voluntary basis.

Skills profile. In England, Wales and Northern Ireland, school-leavers who have not achieved a minimum qualification (a good GCSE) in each of English, mathematics and ICT are supported in pursuing one or more key skills qualifications (in communication, application of number and/or information technology) via further education or a work-based route. In Denmark also, participation in the leaving examination for compulsory school is optional, even though some 90 % of pupils sit it.

All countries stress the role of assessment as a tool for monitoring the individual progress of pupils and guiding their development. The resultant focus on formative assessment methods is consistent with the general shift of emphasis from measuring knowledge towards assessing performance as regards abilities, skills and competencies. In the majority of countries, tests for measuring pupil attainment are set and marked by schools themselves, yet again confirming the great confidence education systems place in their teachers. A few countries organise centrally devised tests to assess the achievements of pupils with a view to promoting them to the next class or awarding them certificates. They are Denmark, France, Ireland and the United Kingdom, of which only the last (with the exception of Northern Ireland) has integrated key competencies into the curriculum. Italy is currently the only country contemplating changes supported by more standardised arrangements for assessment at the end of years 5 and 8. It is examining the possibility of curtailing teacher responsibility for pupil assessment by involving the National Institute for Assessment.

Rather than or in addition to using centrally established tests to measure the educational achievements of individual pupils, some countries use tests to monitor the overall performance of the education system. The French Community of Belgium has been running external evaluations since 1994. These evaluate competence levels – generally in French and mathematics – at the beginning of certain stages, so that teachers can judge the work required in order to attain the levels prescribed for the end of the stage concerned. Nationwide assessment of all pupils in French and mathematics at the age of 8 (the third year of primary school) and 11 (first year of secondary school) was introduced in France in 1989. Furthermore, the country is regularly surveying representative samples of pupils to assess their knowledge of civics. Spain and Italy also regularly assess pupils to evaluate their knowledge and skills in certain subjects. In Ireland, almost all primary schools use standardised tests at least once a year to measure attainment in literacy and numeracy. Portugal is currently phasing in national tests to assess pupil attainment in Portuguese and mathematics at the end of each of the three stages of basic education. National evaluations in Finland provide information on the extent to which pupil attainment meets the objectives of the framework curriculum. They assess performance in core subjects and intercurricular issues but also in competencies such as learning-to-learn, motivation to learn and communication. National evaluations concern only a sample of pupils and their findings are made public. In Sweden, national tests available in Swedish, English and mathematics are designed to measure pupil attainment at the end of the fifth and the ninth years. The tests are mandatory in Year 9, but schools choose whether or not to use them in Year 5. They are primarily designed as a tool for monitoring the education system.

The use of centrally agreed common performance standards to assess pupil attainment is not very widespread among EU countries. Those in favour argue that uniform standards raise the overall quality of education by obliging all learners to achieve the same attainment level. Common standards allow for better comparison and interpretation of assessment findings making them a more reliable and meaningful indicator of educational quality. Those against claim that the ability and maturity of pupils vary widely. They argue that in order to remain attainable by everyone, common minimum standards might not be set sufficiently high. It is further argued that uniform standards prevent schools from freely adapting standards to circumstances dictated by their pupil intake.

Among the countries whose education systems have adopted the notion of key competencies, all but Portugal have also set national performance standards. The French Community of Belgium has set two levels for key competence performance, namely competence thresholds at the end of the second year of secondary education and final competencies at the end of compulsory schooling. In England and Wales, a national eight-level scale to measure pupil progress in all National Curriculum subjects was introduced as an integral part of the implementation of the National Curriculum from 1989. Pupils are expected to gradually improve their performance until they reach at least level five or six at the age of 14. There are also national learning targets for both England and Wales for the overall percentage of pupils attaining the expected level in English (and Welsh in Wales) and mathematics at ages 11 and 14. In Scotland, first time assessment of Core Skills generally takes place at the end of compulsory education when pupils are aged 16. Results are judged on a five-grade scale and are recorded in the so-called Core Skills profile which learners can develop as they progress through further education.

No other country has yet set any standards for key competencies. All German *Länder* are committed to introducing common standards for core subjects in 2004. At the same time, curricula in the *Länder* increasingly emphasise the importance of the acquisition of key competencies, which were originally defined as cross-curricular competencies. In line with the new definition of key competencies, school policy is now increasingly focused on promoting cross-curricular and subject-specific competencies. Austria is currently engaged in a curricular review for the purpose of identifying a number of key competencies and associated minimum standards for lower secondary education. Suggestions for common standards so far relate to four key competencies, namely reading, basic mathematical understanding, basic understanding of natural sciences and foreign languages. Whether these are to be considered general or subject-specific competencies remains to be seen. Portugal's national curriculum states explicitly that essential competencies do not represent minimum levels of achievement. The German-speaking Community of Belgium, Spain and the Netherlands have adopted a similar approach. All make the pursuit of educational targets mandatory without however prescribing minimum attainment levels, and schools are required to help pupils reach the highest possible levels.

COUNTRY REPORTS

Terms used to express the notion of key competence

As far as general compulsory education is concerned, the French Community employs a series of terms to convey the concept of key competencies: ***socles de compétences*** **(competence thresholds),** and ***compétences terminales et savoirs requis*** **(final competencies and required know-what and know-how).** These terms were first introduced by the *décret «Missions»* ([8]) ('Missions' Decree) in 1997. The decree defines the term 'competence' as the capacity to use an organised set of know-what, know-how and attitudes in order to complete a certain number of tasks. ***Socles de compétences*** are understood as a system of reference that presents in a structured manner those key competencies that pupils should have acquired after the first eight years of compulsory education (at the end of the second year of secondary education), as well as those to be mastered at the end of each stage during the same period. Mastery of these competencies is considered necessary for social integration and for the pursuit of further studies. The term ***compétences terminales*** refers to a system of reference that presents in a structured manner those key competencies whose mastery at a given level is expected at the end of secondary education.

Each organising body ([9]) develops its own curricula taking account of the systems of reference that are part of the *socles de compétences*, and *compétences terminales* and *savoirs requis*. Although each organising body is free to choose its own teaching methods, they must nevertheless follow an approved curriculum and respect a minimum timetable. Key competencies fall into two categories: *compétences disciplinaires* (subject-based competencies) and *compétences transversales* (transversal competencies). The 'Missions' Decree refers to ***compétences disciplinaires*** as competencies to be mastered within a certain discipline and ***compétences transversales*** as attitudes, mental processes and methodological procedures common to all disciplines and which must be put to work when developing the know-what and the know-how in the various disciplines. The aim of mastering these competencies is to give learners growing autonomy.

Selection of key competencies to be acquired by the end of compulsory education

During the entire period of compulsory education the following four general aims are pursued simultaneously and in no particular order of preference:

- promote self-confidence and the personal development of every pupil;
- make all pupils acquire the knowledge and competencies which enable them to learn throughout life and play an active role in economic, social and cultural life;

([8]) *Décret définissant les missions prioritaires de l'enseignement fondamental et de l'enseignement secondaire et organisant les structures propres à les atteindre du 24 juillet 1997.*

([9]) The organising body of a school *(pouvoir organisateur)* is the controlling authority, natural or legal, private or public person(s), assuming responsibility for that school.

- prepare all pupils for life as responsible citizens able to contribute to the development of a democratic, supportive, pluralistic society open to other cultures;
- ensure that every pupil has the same opportunities for social emancipation.

The *socles de compétences* currently in force were adopted in 1999 by the parliament of the French Community. They concern the following eight subject areas:

- French,
- mathematics,
- raising awareness for and initiation to science,
- modern languages,
- physical education,
- education with the help of technology,
- artistic education,
- raising awareness for and initiation to history and geography (including preparation for social and economic life).

Further to the *socles de compétences* the parliament of the French Community has also adopted *compétences terminales* and *savoirs requis* for the following domains:

- French,
- mathematics,
- Latin and Greek,
- history,
- geography,
- modern languages,
- sciences,
- social and economic sciences,
- physical education.

Acquisition of key competencies

Introduction of the *socles de compétences* and the *compétences terminales* did necessarily lead to a review of the curricula. These no longer focus on teaching content but on levels of competence to be attained at specific points in a pupil's career. This new approach is mentioned explicitly in Article 8 of the 'Missions' Decree. The Article stipulates that in order to attain the general educational goals, know-what and know-how, irrespective of whether they are developed by the pupils themselves or transmitted to them, must be seen from the point of view of

the acquisition of competence. Competencies are acquired as much during lessons as other educational activities and generally through everyday life at school. With this in mind the French Community as well as all organising bodies must ensure that schools:

- expose pupils to situations that require the simultaneous use of transversal and subject-specific competencies (including the relevant know-what and know-how);
- give preference to activities that require exploration, production and creation;
- establish links between theory and practice which should provide, in particular, for the construction of concepts on the basis of practical experience;
- find a balance between individual and collective work and develop the ability of pupils to apply themselves to achieving specific goals;
- make sure that every pupil respects the twofold obligation to participate in all activities involving certification by the school and to complete all required tasks;
- make guidance an integral part of the educational process, by raising awareness among pupils of different professions and informing them about the possible areas of further training;
- use ICT as a tool for development and greater autonomy, and for tailoring learning pathways to individual needs;
- develop a taste for culture and creativity and, in collaboration with other relevant agencies, promote the participation in cultural and sporting activities;
- educate pupils so that they respect the personalities and convictions of others and recognise their duty to oppose moral and physical violence; develop democratic processes as an expression of civil and responsible behaviour inside schools;
- participate actively and constructively in the life of the local community, and be open to democratic debate.

As far as teaching methods are concerned, the pact adopted in 1959 *(Pacte scolaire)* grants each organising body the freedom to choose its own approach to teaching. Instructions on teaching methods are therefore not issued centrally but drafted by each organising body separately, in accordance with the 'Missions' Decree referred to above.

Compulsory subjects and their contribution to the development of key competencies

The adoption of the *socles de compétence,* and the *compétences terminales* and the *savoirs requis* by the parliament of the French Community resulted in a major curricular reform. The new curriculum for basic education which is coming into force in September 2002 comprises eight subject areas. Within them, teaching of the following subjects has been made mandatory for at least part of compulsory education:

- mathematics,
- French,

- science (initiation classes in primary education; biology, chemistry and physics in secondary education),
- geography,
- history,
- physical education,
- modern languages.

The teaching of modern languages only becomes mandatory with effect from the third stage of primary education. For each of these subjects the authorities have established a list of *socles de compétences*. As a general rule these lists are subdivided into subject-based and transversal competencies. For the early learning activities in science, geography and history, however, the *socles de compétences* are presented under the headings 'know-what' and 'know-how'.

In addition to developing subject-specific competencies, the following disciplines serve as a vehicle for the promotion of generic competencies. Classes in history promote responsibility, civics and democracy; the teaching of French fosters a critical mind, democracy and communication; physical education helps to encourage the personal development and promotes cooperation; and foreign language teaching creates openness and interest in other cultures.

Measurement, assessment and certification of key competencies

The change from a content-based to a competence-based curriculum was accompanied by a reflection on pupil assessment procedures with the intent of giving preference to an approach that focuses on the capacity of pupils to apply their knowledge in appropriate circumstances.

It is important to distinguish between external and internal evaluations. External evaluations are administered by the Ministry of the French Community and are purely informative, diagnostic and formative in nature. They have no impact on how pupils progress through school. Since 1994, external evaluations have been conducted systematically in one ore more subjects. These tests evaluate competence levels at the beginning of certain stages of education. As a result, teachers are able to judge the amount of work necessary to reach the *socles de compétences* and/or the *compétences terminales* and *savoirs requis* which have to be achieved in accordance with the level of education concerned.

Assessment of the achievements of individual pupils is the responsibility of each school. The Decree of 24 July 1997 (so-called 'Missions' Decree) has introduced a new mechanism for the introduction of benchmark assessment tests. These tests are developed by commissions in charge of the evaluation tools and must correspond to the *socles de compétences* and the competencies to be mastered at the end of the general and technological as well a the vocational and technical 'humanities'. The resultant evaluation tools are, for information purposes only, put at the disposal of all schools and teachers so that these can draw inspiration for the development of their own tests.

At the end of Year 6 of primary education pupils take exams leading to the *certificat d'études de base* (CEB, or primary education certificate). The necessary level of attainment is prescribed by the *socles de compétences*. Obtaining the CEB is not a condition for admission to secondary education. Pupils who have not obtained the CEB at the end of primary education may do so during the first stage of secondary education. After four years of secondary education pupils may obtain the *certificat d'enseignement secondaire du deuxième degré* (CES2D, or fourth year secondary education certificate). Successful completion of secondary education and, at the same time, compulsory education is certified by the *certificat d'enseignement secondaire supérieur* (CESS, or upper secondary education certificate). The achievements of pupils at this point in time are judged in relation to the competence levels prescribed by the *compétences terminales* and the *savoirs requis*.

Standards for key competencies

As mentioned earlier, specific *socles de compétences* have been established for eight separate domains. These thresholds are structured so as to ensure a continuous progression in the mastery of these subject areas during the first eight years of compulsory education. Special attention is focused on three specific points in time, namely the end of the second and the sixth years of primary education, and the end of the second year in secondary education. The *socles de compétences* define the level of attainment required in each of the eight subject areas at the end of each of the three stages referred to above. The 'Missions' Decree defines three levels of mastery: awareness for the use of a competence, compliance with the level required for certification and the simple maintenance of a competence. The levels of competence to be attained by the end of compulsory education are defined as the *compétences terminales* and the *savoirs requis*.

Participation in international assessment studies of key competencies

The French Community of Belgium has participated in a large number of international surveys: Pilot Twelve-Country Survey (1959), FIMS (1965), Study of English as Foreign Language (1971), Study of Reading Comprehension (1971), Study of Literature Education (1971), Study of Written Composition (1971), FISS (1971), SIMS (1981), Preprimary Study (1987-91), RLS (1991), TIMSS (1995), CIVED (1999), COMPED (1989), SITES (1998) and PISA.

Support for pupils with special educational needs

Special education is reserved for pupils with severe and permanent handicaps. In this case, both the *socles de compétences* and the educational activities are adapted to a pupil's individual needs. Introduced by decree in 1998, total immersion in sign language is now available to help deaf pupils attain the *socles de compétences* and especially those related to the understanding of written texts and ability to produce them.

Latest developments in relation to key competencies

The most recent development has been the establishment of a steering commission whose tasks include the development of a consistent system of indicators, the promotion of consistency between the curricula, the *socles de compétences* and the *compétences terminales*, and the def-

inition of priority topics to support teachers who are preparing pupils to achieve the *socles de compétences* and acquire the *compétences terminales.*

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BELGIUM (GERMAN-SPEAKING COMMUNITY)

In 1989, as part of the constitutional reform which led to the transformation of Belgium from a unitary to a federal state, the three Communities were given full responsibility for their education systems. Unlike its French and Flemish counterparts, the German-speaking Community was faced with the enormous task of having to build from scratch the relevant legislative and administrative structure in the field of education. As a result, it was only in 1996/97 that the German-speaking Community was ready to address issues related to educational content. In view of the size of the task and the limited human resources available, the Community decided to accomplish the necessary reform in stages. The first decree, the so-called *Grundlagendekret* ([10]), was issued in 1998 and related to general provisions and regulations in full-time compulsory mainstream education. This was followed in 1999 by the *Grundschuldekret* ([11]), the decree on full-time compulsory mainstream education at pre-primary and primary level. Further decrees on secondary and higher education, as well as special schools, are still at the planning stage.

Terms used to express the notion of key competence

Due to its geographical position and the size of its population, educational policy in the German-speaking Community has been strongly influenced by events in neighbouring countries and regions. At the time the *Grundlagendekret* was under discussion during the second half of the 1990s, a debate on the changing role of education was under way in a number of European countries. Its most significant aspect was the view that the quality of education could not solely be upheld by means of educational goals that were either very general or mainly concerned the transmission of knowledge. This, indeed, was the view of the German-speaking Community which thus decided to make the development and acquisition of competencies one of the cornerstones of the new *Grundlagendekret*. Article 12 of this decree states that 'development of competencies is the educational goal of all primary and secondary education. Society has made it the school's task to provide all pupils with the opportunity to acquire a maximum of competencies and to guide them towards the mastery of key competencies.' Only in the case of the kindergarten was it considered more appropriate to use the term ***Entwicklungsziele* (developmental aims).** For primary and secondary education, ***Kompetenzen* (competencies)** were defined as subject-specific and subject-independent capabilities and abilities in relation to knowledge, skills and attitude. Furthermore, it was decided to attach great importance to some of these competencies – so-called ***Schlüsselkompetenzen* (key competencies)** – which had to be mastered by all pupils in order to be awarded a certificate. Consequently, key competencies were defined somewhat narrowly as those **subject-specific competencies** which had to be attained by every pupil. Cross-curricular competencies, therefore, have not so far been specified, or at least not termed 'key competencies'.

([10]) *Dekret vom 31. August 1998 über den Auftrag an die Schulträger und das Schulpersonal sowie über die allgemeinen pädagogischen und organisatorischen Bestimmungen für die Regelschulen.*

([11]) *Dekret vom 26. April 1999 über das Regelgrundschulwesen.*

Selection of key competencies to be acquired by the end of compulsory education

The decision to make the acquisition of competencies the centre of educational reform in primary and secondary education was immediately followed by the effort to identify the relevant key competencies. Even before the *Grundlagendekret* was issued, the German-speaking Community started to consult all relevant policy papers available or under discussion within the Community and abroad. A list of competencies was quickly established and submitted to teachers for testing during a one-year trial phase. In October 2001, the government was ready to submit a draft decree ([12]) on the educational aims of the kindergarten and on key competencies in primary education and the first stage of secondary education. This draft is currently subject to discussion in the appropriate committee of the Council of the German-speaking Community, the RDG ([13]). Once these key competencies have been established, the necessary adjustments will have to be made to ensure that their acquisition becomes an integral part of the curriculum for each subject. In the meantime, teachers need to be trained for their new educational task.

Although currently not termed key competencies, cross-curricular competencies and their development play an important role in compulsory education. Acquisition of the appropriate learning and working methods, learning-to-learn and promotion of the willingness to perform are all cross-curricular competencies. So is the ability to put information and communication technology (ICT) to effective use. However, assessing mastery of these competencies for certification purposes is much more difficult than assessment of subject-specific competencies. It is for this reason that the Community decided not to define cross-curricular competencies as 'key competencies'.

Acquisition of key competencies

The overall aim of primary and secondary education is to impart competencies. Schools should ensure that all pupils develop a maximum level of competencies, which must necessarily include key competencies. Teaching has to be organised in such a way that pupils can actively participate in the construction of their knowledge and in the development of competencies. In order for them to understand the purpose of learning, teaching must be adapted to the real life experience of the pupils concerned. The use of ICT must be taught in a way that is in keeping with their age.

Most curricula still in use today date from before 1989 when they were established centrally and edited by the national Ministry of Education. Their emphasis is on the transmission of knowledge and skills. The French Community of Belgium has since reviewed many of its

([12]) *Dekretentwurf über die Festlegung der Entwicklungsziele für den Kindergarten und der Schlüsselkompetenzen für den Primarschulbereich und für die erste Stufe des Sekundarunterrichts mit Ausnahme des berufsbildenden Unterrichts und zur Abänderung des Dekretes vom 31. August 1998 über den Auftrag an die Schulträger und das Schulpersonal sowie über die allgemeinen pädagogischen und organisatorischen Bestimmungen für die Regelschulen und des Dekretes vom 26. April 1999 über das Regelgrundschulwesen.*

([13]) *Rat der Deutschsprachigen Gemeinschaft* - RDG: Assembly of elected members who exercise legislative power at the level of the *Gemeinschaft*.

curricula for secondary education, and some of them have subsequently been adopted by the German-speaking Community. These revised curricula no longer emphasise knowledge and skills alone, and now attach prime importance to competencies (whether they are subject-specific or subject-independent). The validity of all curricula will have to be thoroughly examined, once the new decree on key competencies and developmental goals has been issued.

Compulsory subjects and their contribution to the development of key competencies

Teaching of the following subjects or subject areas is mandatory during the six years of primary education: the mother tongue, psychomotor skills and physical education, arts and crafts, mathematics, the relationship of pupils with the surrounding world, a first foreign language, and religion or ethics. In addition, learning-to-learn and social skills have to be taught through the medium of all subjects.

The common core curriculum for the first two years of secondary education comprises the mother tongue, a first foreign language, mathematics, history, geography, science and technology, religion or ethics, physical education and sport as compulsory subjects. A number of teachers' working groups have established key competencies for all of these subjects and subject areas. They have also defined the points in a pupil's career when these competencies should be considered attained: at the end of *Grundschule* (primary school), at the end of the first stage of secondary education or at a later point in time. Sufficient mastery of all relevant key competencies is required in order for pupils to obtain the leaving certificate at the end of primary school or at the end of the first stage of secondary school.

Measurement, assessment and certification of key competencies

Continuous formative assessment is intended to monitor the progress of pupils in acquiring competencies. Evaluation does not measure the level of competencies against set standards but provides basic information on a pupil's individual development. Regular assessment provides pupils with the opportunity to improve their learning strategies and teachers can check the effectiveness of their teaching methods and, if necessary, adapt them. Assessment also helps to identify pupils who need additional help in order to realise their full potential. Normative assessment results are communicated to parents and pupils in order to inform them of the extent to which pupils have attained the stipulated norms.

All compulsory subjects are to be taken into consideration by all schools for the leaving certificate at the end of primary school with special attention for the following three subjects: mother tongue, first foreign language and mathematics ([14]). The decision on promotion and award of the *Abschlusszeugnis der Oberstufe des Sekundarunterrichts* (school-leaving certificate at the end of secondary education) is still based on successful performance during the last two years of schooling and examinations in all subjects. Once the key competencies for the final two-year stage of secondary education have been established, award of the school-leaving

([14]) These suggested amendments to the *Grundlagendekret* are the outcome of discussions held in June 2002. They are subject to parliamentary approval.

certificate will depend on attainment in the key competencies defined for mother tongue, a first and second foreign language, mathematics, history, geography, natural sciences, physical education plus 'other' subjects. The latter depend on the main options chosen by each pupil. In addition, the organising body or the school head acting on a proposal by the Pedagogical Council may decide that other subjects are taken into account.

Standards for key competencies

As explained earlier, key competencies are those subject-specific competencies that each pupil must master at the end of any stage in order to be awarded the relevant certificate. End of stage or school-leaving certificates are official confirmation that the pupil has achieved sufficient mastery of the key competencies prescribed for the educational level concerned. In primary education, the core subjects to be assessed are the mother tongue, a first foreign language, mathematics, psychomotor skills and physical education, arts and crafts, mathematics, the relationship of pupils with the surrounding world. In the first two years of secondary education, mastery of key competencies in the following compulsory subjects of the common core curriculum will be assessed: mother tongue, a first foreign language, mathematics, history, geography, science and technology, physical education and sport. During the following two stages (two years each) the selection of core subjects to be assessed is extended to include optional main subjects. The organising body or the school head can decide to add further subjects.

Support for pupils with special educational needs

Remedial lessons and tutorial classes can be organised for pupils who experience difficulties in achieving mastery of the key competencies. Many pupils benefit from this offer within mainstream compulsory education. Remedial teaching often takes the place of optional subjects so that pupils do not lose out in lessons on compulsory subjects. About 2.6 % of pupils have severe special needs and attend *Sonderschulen* (special schools) where they receive the support needed to fulfil their potential.

Participation in international assessment studies of key competencies

The only international assessment survey in which the German-speaking Community has taken part so far is PISA.

Latest developments in relation to key competencies

Dekretentwurf über die Festlegung der Entwicklungsziele für den Kindergarten und der Schlüsselkompetenzen für den Primarschulbereich und für die erste Stufe des Sekundarunterrichts (Draft Decree on the Developmental Goals in Kindergarten and the Key Competencies for Primary and the First Stage of Secondary Education) is currently (summer 2002) being debated by the competent committee of the Council of the German-speaking Community. If adopted, the decree will identify a list of key competencies to be developed and introduce central minimum standards for all of them.

The Council of the German-speaking Community is currently (September 2002) discussing the problem that in line with the *Grundlagendekret* schools do not all assess the same subjects and thus not the same key competencies when deciding whether to award the leaving certificate at the end of primary education. The *Grundlagendekret* together with the *Grundschuldekret* state that mastery of key competencies in mother tongue, first foreign language and mathematics is a necessary condition for the award of the leaving certificate at the end of primary education. At the same time, however, schools are free to include additional subjects in their assessment of key competencies. This has the undesirable effect that key competencies certified at the end of primary education may vary from school to school. The suggested solution to this problem is outlined in the section 'Measurement, assessment and certification of key competencies'.

Terms used to express the notion of key competence

The debate on competence in education was initiated when, in the wake of federalisation, a new system for quality assurance was introduced in the Flemish Community. One of the cornerstones of this system was the definition of the social task of education. There was general agreement that, in order to guarantee the quality of education in terms of content, educational goals had to be established for everyone. In 1998, when the Flemish Community took part in the OECD DeSeCo ([15]) project, key competencies were again at the top of the agenda. DeSeCo provided Flanders with an ideal opportunity to rekindle the debate, and engage in open discussion and research on the subject. A restricted working group was given the task of defining and identifying relevant key competencies for the Flemish Community. In July 2001, the working group presented a draft report containing tentative definitions for the terms 'competence' and 'key competence'.

A ***competentie*** **(competence)**

- is multidimensional as it involves a combination of knowledge, insights, skills and attitudes;
- may be acquired in all sorts of contexts, both formally and informally, consciously and unconsciously;
- must provide a suitable answer to the requirements of a specific situation or task;
- is a necessary though insufficient condition for (re)acting efficiently at any time. It merely has a predictive value for actual performance.

A ***sleutelcompetentie*** **(key competence)** also meets the following requirements:

- it is *transferable* and therefore applicable in many situations and contexts;
- it is *multifunctional* as it can be used to achieve several objectives, solve different problems and accomplish different tasks.

These definitions will be examined more fully and refined in the near future with the stakeholders concerned. This will be done within the context of the Action Plan for Lifelong Learning, in which a frame of reference for key competencies will be developed.

Selection of key competencies to be acquired by the end of compulsory education

In the DeSeCo draft report for Flanders, a number of key competencies were selected on the basis of lists submitted by 16 bodies from various social sectors, such as education, the labour market, culture, welfare and so on. The subsequent grouping together of these competencies was a multi-stage process. First, the lists of competencies from these 16 bodies were combined in order to provide a single exhaustive list of some 90 competencies. Next, very similar or

([15]) Definition and Selection of Competencies.

closely related competencies were merged under one general heading. This shortened list of competencies was then entered into a frequency table, indicating how often a specific competence had been selected. Any competencies that were selected by less than 25 % of the bodies involved were taken off the list. As a result, it was possible to classify the key competencies into the following six categories and related subcategories:

Category: social competencies

Subcategory 1: participating actively in society with respect for its multicultural dimension and concern for equal opportunities

Subcategory 2: communication competencies (including assertiveness, being able to stand up for oneself and maturity)

Subcategory 3: being able to cooperate

Category: positive self-image

Subcategory 4: having a positive self-image with a view to self-development (including self-confidence)

Category: being able to act and think independently

Sc 5: competencies in data acquisition and processing (including ICT)

Sc 6: problem-solving competencies

Sc 7: self-guidance and self-regulation (including a sense of responsibility)

Sc 8: being able to think and act critically and reflectively

Category: motivational competencies

Sc 9: having the courage to explore and being eager to learn

Sc 10: a sense of initiative

Category: mental agility

Sc 11: creativity and inventiveness

Sc 12: flexibility and adaptability

Category: functional competencies

Sc 13: linguistic competencies

Sc 14: technical competencies

The sole purpose of this list is to stimulate the debate on key competencies. In other words, **the list is intended as a basis for discussion and may in no way be considered a definitive**

selection of key competencies for the Flemish Community. As mentioned earlier, a public debate on this subject has still to be held in the Community.

Acquisition of key competencies

The curriculum sets educational goals which fall into two categories: attainment targets (for primary and general secondary education) and developmental objectives (in pre-school and vocational education). They are the minimum objectives with regard to knowledge, skills and attitudes that the government considers should be achieved during compulsory education. The Flemish Community parliament obliges schools to offer this minimum educational provision to all pupils. Although not generally referred to as such, key competencies and their development are included in the educational goals and are therefore implicitly part of the curriculum.

Most attainment targets and developmental objectives are closely related to a particular subject area (in primary education) or a specific subject (in secondary education). In contrast to these subject-specific goals, cross-curricular/transversal attainment targets or developmental objectives relate to several subjects. The latter are organised around a number of social priority topics, namely learning to learn, social skills, citizenship training, health education, environmental education and expressive/creative training.

Compulsory subjects and their contribution to the development of key competencies

Attainment targets and developmental objectives have all been formulated for basic education ([16]). Basic education is to be understood as 'the cohesive system of knowledge, skills and attitudes that are a precondition for critical and creative activity in society and for developing a personal life.' This definition also includes the concept of key competencies.

In the case of pre-primary education, attainment targets are formulated for five fields of learning: physical education, expressive arts, language, environmental studies (learning about nature, man, society, technology, time and space), and mathematics. In primary education, French is added as a new field (although not as a compulsory subject). In addition, cross-curricular attainment targets are set for 'learning how to learn' and social skills.

As far as secondary education is concerned, a set of attainment targets for the first and second years of the first stage (classes A and B) ([17]) have already been developed for all subjects in the core curriculum. The Flemish Community parliament has adopted them in the form of a decree. The core curriculum comprises the following compulsory subjects: religion or non-denominational ethics, Dutch, French, mathematics, history, geography, natural sciences, art and music, technical education, physical education and a foreign language.

([16]) *Basisonderwijs* (basic education) refers to pre-primary and primary education.

([17]) Generally, pupils have reached the age of 12 when admitted to secondary education. They may enter first year A on the basis of having obtained the Certificate of Basic Education. Without this certificate, pupils may be admitted to first year B.

Attainment targets have also been established for the five cross-curricular topics: learning how to learn, social skills, education for citizenship, health education, and environmental education. The next step will be to establish similar targets for the second and third stages of secondary education. These attainment targets will probably become official as from the school year 2002/03.

Measurement, assessment and certification of key competencies

The Flemish Community does not operate central tests to assess pupils' achievements. This is done at school level and up till now has often been confined to gauging the level of knowledge acquired, since assessing skills and attitudes is considered to be much more difficult. The issue of assessment is however part of the debate on key competencies. The main difficulty for schools and teachers is to break down key competencies into representative observable component skills which can be assessed. Another problem is the tremendous differences between pupils. The ability to communicate, for example, can vary greatly among 12-year-olds. The education system is therefore looking for alternative assessment techniques – of which the use of key competencies is certainly one – to evaluate progress in pupils. The idea is not to start from a certain pattern of expectations but to indicate how pupils are developing and what progress they are making. This also calls for a change of outlook and for new competencies in teachers, who often still assess from a knowledge-based point of view. In the long run, the aim of assessment is to determine whether an individual is sufficiently competent to make a certain choice of studies or to start following a certain type of training programme.

The Flemish Community government has at its disposal several tools to implement its policy of quality assurance, including educational indicators which comprise context, input, process indicators and output indicators. Currently, the Flemish Community does not have the sort of output indicators that provide information about the extent to which its population has acquired key competencies. Yet a number of developments show that the educational authorities of the Community are paying heed to the output of basic skills and key competencies.

Although it does not include any output indicators on key competencies, the publication *'Vlaamse onderwijsindicatoren in internationaal perspectief – editie 2000'* (Flemish educational indicators in an international perspective – 2000 edition) does include a context indicator for assessing society's expectations regarding the acquisition of social skills. This indicator shows that society regards 'learning to cooperate', 'learning to take responsibility' and 'learning to communicate' as extremely important contents of education. When comparing these expectations to the 'social skills' attainment targets applicable at the first stage of secondary education, the indicator shows that although attainment targets largely satisfy society's expectations, education should focus even more on imparting social skills.

Amongst the output indicators produced by the Flemish Community is one on the wellbeing of pupils. It reveals, among other things, the influence of their experiences at school on their emotional and social development.

The Flemish Community government also intends to carry out large-scale periodic surveys to see whether attainment targets have been achieved. The necessary tools have already been developed for 'reading comprehension' (Dutch language) and for the entire field of mathematics, both targeted on primary education. In secondary education, survey tools are now being developed for 'data acquisition and processing' in the first stage of secondary education. The findings are meant to optimise educational provision.

Finally, the education inspectorate carries out school audits with the help of observations and interviews which it uses to check the extent to which the attainment targets and developmental objectives – and hence also, indirectly, the key competencies – are being developed at school.

Standards for key competencies

Educational goals (attainment targets and developmental objectives) are the minimum level of attainment pupils should have reached by the end of compulsory education. Schools are obliged by decree to offer sufficient content and deliver it in a way that enables all pupils to attain the prescribed goals (for further details, see also the section 'Acquisition of key competencies').

Support for pupils with special educational needs

The Law of 6 July 1970 specifies that special education caters for children and adolescents between the ages of 3 and 21 who are capable of receiving education but for whom mainstream schools are unable to offer suitable provision. In general, special education is organised in schools that are separate from mainstream schools but often linked (e.g. as a result of physical proximity) to other social and educational institutions for handicapped people.

The Decree on Education VIII of 15 July 1997 provides so-called integrated provision for basic and secondary education. It caters for the integration of special education into ordinary education. Children with a handicap and/or learning difficulties may attend classes in ordinary schools on a permanent or intermittent basis, either part time or full time.

Remedial teaching is available for pupils experiencing temporary learning difficulties. Such teaching is however not widespread in secondary education. In an effort to fight school failure, special attention is paid to more differentiated ways of teaching.

Participation in international assessment studies of key competencies

Between 1994 and 1997, the Flemish Community cooperated in the IALS project designed to review how skills related to reading, writing and calculating were spread amongst the adult population, and the bearing they had on socio-demographic variables and employment.

Latest developments in relation to key competencies

The Flemish Community is currently preparing a wide-ranging discussion on the delivery of key competencies in compulsory education. A provisional list of such competencies has already been established but the final selection has still to be made.

FIGURE 6: KEY COMPETENCIES DEFINED BY THE ST.A.M. PILOT PROJECT

Field	Key competency	Sub skill
Knowing	Dealing with varied mental schemes when interpreting experiences	Information acquiring and processing skills (including ICT)
		Thinking and acting critically
		Reflecting on own experiences
		Expressing own opinion
		Creating space for accepting other people's experiences as a model
		Participating actively in society while having respect for the multicultural aspect of it and for equal chances.
Ability	Communicative competencies	The ability to respond correctly in the interaction with a talking partner
		Having a high amount of verbal and non verbal ability of expression
		Having knowledge of codes and symbols which are important for communication, and of the shared meanings of those symbols
		Force of imagination to invent symbols
		Language skills
	Creativeness	Being able to do teamwork
		Working with problem solving skills
		Sense of initiative
		Generating original ideas in order to answer problems to which more than one solution can be given
		Flexibility and adaptability
Being	Urge to explore	Daring to explore and being eager to learn
		Approachable by reality
		Being moved into actions like observing, conscious experiencing, letting things dawn upon oneself, analysing in detail, questioning
	Self steering	Being able to take distance in order to learn
		Controlling available things within oneself and within the surroundings in such a way that the highest possible way of satisfaction is offered
		Having a positive self image and having an eye for self development (including self confidence)
		Being strong willed
		Being able to make choices and explain the made choices
		Being able to draw up a scenario and being able to put it into action

Source: Departement van onderwijs.

The *Studiegroup Authentieke Middenschool* – St.A.M. *(Study Team First Degree Schools)* is a pilot project trying to identify a list of key competencies that individuals need to participate critically and creatively in building society. Its work has strongly influenced the Flemish Community's contribution to the DeSeCo project. The team takes the view that any selection of

key competencies is influenced by the researcher's view on people and society. St.A.M. considers human beings as a network of relations that can either function independently or connect itself to other networks to form a society. On that basis St.A.M. has defined three fields of key competencies: knowing, ability and being. 'Knowing' allows people to get an insight into the networks of relations defining their identity. The field of 'ability' enables people to create and build networks of relations. Finally, the field 'being' enables people to operate and control networks.

Attainment targets are being developed for the second and third stages of secondary education and should be operational by the 2002/03 school year.

As far as pupils with special educational needs are concerned, introduction of a new integrated policy for equal opportunities is planned for the 2002/03 school year. This will combine all existing measures into one consistent framework.

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DENMARK

Terms used to express the notion of key competence

According to the Act on the *Folkeskole* ([18]), one of the aims of this kind of school is to work with the parents 'to further the acquisition by pupils of knowledge, skills, working methods and forms of expression and thus contribute to their all-round personal development'. The Act states that the Minister of Education shall issue regulations pertaining to the aim of the teaching in subjects and obligatory topics and shall indicate central knowledge and proficiency areas. This is regulated with the Regulation on Educational Aims in *Folkeskole´*s Subjects and Obligatory Topics with Specification of the Central Knowledge and Proficiency Areas.

The Ministry of Education establishes the aims of teaching for individual subjects and issues syllabi for them. These syllabi also refer to areas of competence for these subjects, the so-called ***centrale kundskabs og fardighedsomrader* – CFK (central knowledge and proficiency areas)**. These areas refer to subject-specific knowledge and skills. Central knowledge and proficiency areas are defined as the foundation for the planning, carrying out, and evaluation of the teaching in a particular subject.

The term *nøglekompetence* (key competence) generally refers to the ability to apply knowledge and qualifications to differing situations. However, the term is not part of educational terminology. In the introduction to the *Nationalt Kompetenceregnskab* (National Competence Account) key competencies are defined as 'competencies that act as axes of rotation (hence the word key), activating the professional competencies and serving as a prerequisite for the acquisition of professional competencies, and therefore in demand by all players in the labour market, albeit to a variable extent. Key competencies are developed in the education system, in the labour market and in civil life.'

Selection of key competencies to be acquired by the end of compulsory education

In an effort to identify the competence profile for the knowledge society, where professional, personal and social competencies are used simultaneously and developed continuously, Denmark is in the process of establishing The National Competence Account. This is an interministerial project involving the Ministry of Education, the Ministry for Employment, the Ministry of Science, Technology and Innovation and the Ministry of Economic and Business Affairs. The project will run until 2003 and its outcome should fuel the public debate on competencies and inform policy in this area. It should also help Denmark to situate itself in comparison to other countries. So far the National Competence Account has identified competencies for professional life and personal development (environmental and natural competencies, physical competencies, social competencies and learning competencies), as well as those that support both (organisational and social competencies). Based on the OECD work for the DeSeCo Report, the following ten key competencies have been identified:

([18]) The *folkeskole* is a municipal basic school offering nine years of comprehensive primary and lower secondary education, an optional pre-school class and a supplementary optional 10th year.

- social competence,
- literacy competence,
- learning competence,
- communicative competence,
- self-management competence,
- democratic competence,
- ecological competence,
- cultural competence,
- health, sports and physical competence,
- creative and innovative competence.

It is also planned to express all such competencies by means of indicators. These are not only concerned with measuring the extent to which the population possesses a certain competence, but also with the conditions that provide an opportunity for or a barrier to the development of the particular competence.

Acquisition of key competencies

As far the *folkeskole* is concerned, municipalities are free to follow the curriculum guidelines issued by the ministry, which specify the time allocation for each individual subject. The organisation of teaching for each, including the choice of teaching and working methods, teaching materials and the selection of subject-matter, has to comply with established aims. It also has to be varied so that it corresponds to the needs and requirements of individual pupils. The school board of the individual school concerned chooses teaching materials and textbooks. Teachers are free to choose their own teaching methods.

Compulsory subjects and their contribution to the development of key competencies

Danish, mathematics, religion, and physical education and sport are mandatory during the entire 9-year period of education at the *folkeskole*. In addition, English, history, music, science, art, social studies, geography and biology, physics and chemistry, needlework, wood/metalwork and home economics are all compulsory for one or more years during compulsory education. Furthermore, instruction in the *folkeskole* includes the following obligatory topics: traffic safety, health and sex education and the family, as well as educational, vocational and labour market guidance.

Measurement, assessment and certification of key competencies

Assessment practices reflect the liberal philosophy of the *folkeskole*. The law prescribes that pupils and teachers should work together in assessing the benefits of teaching and in setting new objectives for the work of the former. Assessment may be based on centrally or locally set

tests, which may be held intermittently or on a strict regular basis and involve some or all pupils. The point at which performance is measured in this way depends on several factors.

Promotion from one class to the next is automatic. Examinations are held at two stages of schooling: after the ninth year or the (voluntary) 10th year. Participation in the school leaving examination is optional and pupils may be examined in any or all of the following subjects: Danish, mathematics, English, German or French and physics and chemistry. All examinations are oral, except in Danish and mathematics which also include a written part. Standard rules have been developed for all examinations with a view to ensuring nationwide uniformity. For the same reason, the written examination questions are set and marked centrally.

Standards for key competencies

The government has established a separate syllabus for each subject taught at compulsory school.

Support for pupils with special educational needs

The Act on the *Folkeskole* states that all children are obliged – and therefore also entitled – to complete the *folkeskole* or other form of provision whose teaching standards are equivalent. If education is not possible in mainstream classes, despite special arrangements for support, pupils are referred to special education. The main problem of some two-thirds of these pupils has been following the instruction, in Danish in particular, but also in arithmetic and English. Even though the numbers have grown substantially over the years, the increase is mainly attributable to children with reading problems. These children are not normally segregated from the class but receive special educational assistance for a limited number of weekly lessons, in reading groups or courses, or in a reading clinic.

Participation in international assessment studies of key competencies

Denmark has taken part in a series of international studies, among them SIMS (1980-82), RLS (1991), TIMSS (1993-95), CIVED (1997-98), IALS (1997), TIMSS-R (1997-2000), SITES (1999-2000), PISA (2000). It is also planning to participate in the second and third round of PISA in 2003 and 2006.

Latest developments in relation to key competencies

In 2001, the Ministry of Education launched *Denmark's strategy for education, learning and IT*. It is a follow-up project to the 1998 action plan on IT (information technology) whose main aim has been to increase the provision of IT equipment and Internet access. The new programme is less concerned with learning about IT than with IT. Its purpose is to achieve the full potential of IT in support of knowledge sharing. Traditionally pupils were limited in their quest for knowledge by the insight of their teachers into the subject and their choice of teaching aids. Electronically-based learning allows pupils to choose those learning strategies best suited to their needs and interests. By supporting the ability of pupils to 'learn to learn', IT is making a valuable contribution to competence building for all and thus to the inclusiveness of education.

The most influential initiative is the National Competence Account (see also the section 'Selection of key competencies'). Its task is to identify the competencies needed for the knowledge society and to suggest the necessary policy adjustments in the economic, education, research and labour market fields. Any changes must be in line with the following two priority areas for the future development of Danish society:

- continued development of competencies and human resources for everybody – both those with a short formal education and those who are highly educated – are central;
- marginalisation processes in the labour market are a threat to a social sustainable society, and a threat to generic competence development.

The project *Better Education* is the path the government wants to follow to attain the aim of creating the best education system in the world. The focus is on upper secondary education; higher education; adult education and continuing training, and these initiatives must be seen in close connection with the government's aims for the *folkeskole* (primary and lower secondary education). The prerequisite for creating the best education system in the world is to make greater efforts within five central areas: qualifications and competencies; flexibility; innovation; free choice and output management.

The objective of the project *Kompetenceudvikling og Matematiklæring (Development of competencies and the teaching of mathematics)* is to establish a common understanding of competencies in the teaching of mathematics at all levels. The project is designed to promote innovative teaching methods for mathematics and should spearhead similar developments in other subjects. The project suggests dividing the learning of mathematics in the following 8 competencies:

- Being able to handle the language and tools of mathematics

  Competency of representation

  Being able to handle different representations of mathematical relations

  Competency of symbols and formalism

  Being able to handle mathematical symbolism and formalism

  Competency of communication

  Being able to communicate through, about, and within the field of mathematics.

  Competency of resources

  Being able to understand and utilize resources when working with mathematics

- Being able to enquire and respond through and in the field of mathematics

  Competency of line of thinking

    Being able to exercise a mathematical line of thinking

  Competency of problem handling

    Being able to identify and solve mathematical problems

  Competency of modeling

    Being able to analyse and construct mathematical models concerning other fields

  Competency of reasoning

    Being able to exercise mathematical reasoning.

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GERMANY

Terms used to express the notion of key competence

The term ***Schlüsselqualifikationen*** **(key qualifications)** was first used by educational researchers in discussions to prepare a reform of vocational training at the beginning of the 1970s. According to Mertens (1974, 1992), the term comprises elements of dynamic development, rationality, humanity, creativity and flexibility. The educational congress *Wissen und Werte für die Welt von morgen* (Knowledge and Values for Tomorrow's World) held in Munich in 1998, took a closer look at key qualifications and their role in preparing people for employment and life-long learning. Key qualifications should enable people independently to access and process any new content with which they are suddenly confronted so that they can learn easily throughout life. Key competencies are thus multifunctional and geared to interdisciplinary application.

The most influential text on the subject of such cross-curricular key competencies is the 2001 country report which Germany contributed to the OECD project *Definition and Selection of Competencies* (DeSeCo). In this report, the term ***Schlüsselkompetenzen*** **(key competencies)** is used to refer to non-subject-related competencies which represent a logically consistent set of attitudes, values, knowledge and skills. Among them are the ability to manage complex situations (problem-solving) and social competencies (such as communication and team-spirit). Competencies, however, can only be developed with the help of subject-related knowledge, which they are unable to replace.

Although there seems to be widespread consensus on the qualities of those general or cross-curricular competencies essential for lifelong learning and effectiveness, educational discussion lacks consistency in the terms it uses to describe them. They range from **'competence', 'basic competence', 'key competence' and 'metacompetence'** to **'metacognitive competence'**. Although sometimes used as synonyms, they may also have different meanings.

In short, cross-curricular key competencies in Germany are those general (subject-independent) competencies that are essential in order to operate effectively at personal and professional level. They are not limited to cognitive abilities and represent complex operational competencies. Subject-independent competencies:

- are required for and supported by different subjects and subject areas,
- help solve complex, holistic tasks in real-life contexts,
- can be transferred to new situations not covered by the curriculum,
- can be characterised as general abilities.

Selection of key competencies to be acquired by the end of compulsory education

Weinert (2001) established that recent publications on the subject in Germany cite more than 650 general key qualifications or key competencies. The reason for such proliferation is the

need to increasingly focus learning on those variables that can be deployed in a maximum number of different institutions, for a maximum number of different tasks and in constantly changing settings.

In 2001, *Bund* and *Länder* representatives, together with academics and representatives of the social partners, the churches, students and apprentices met in the *Forum Bildung* (Forum Education). One of the meeting's governing principles was that all citizens should acquire competencies that help to guide them and enable them to manage plurality and change productively. These competencies include:

- learning to learn,
- linking content-related knowledge with the ability to apply it,
- methodical and operational competencies, in particular in the areas of language, media and the natural sciences,
- social competencies,
- a value reference system.

The curriculum for primary schools in Bavaria, which dates from September 2000, states that, in order for education to be effective throughout life, pupils have to develop the following competencies:

- learning to learn (including media competence)
- critical competence
- empathy
- social competence
- civics and political competence
- managing the demands of the future.

The innovative aspect of this curriculum is inclusion of 'learning to learn' as a competence in its own right. The constituent parts of this competence are the organisation of learning, the selection, storage and processing of information and knowledge, concentration and relaxation, and self-motivation and self-control. Similar competencies have been referred to in discussions on the review of the primary curriculum in North-Rhine-Westphalia. Once again, special attention is being paid to the development of the ability to learn.

According to a 1997 report by the *Ständige Konferenz der Kultusminister der Länder* (the KMK, or Standing Conference of the Ministers of Education and Cultural Affairs of the Länder), one of the main aims of general education at lower secondary level is to strengthen the capacity of young people to undertake vocational training or higher education studies. A provisional list of such work-relevant competencies to be developed for the

Hauptschule ([19]) comprises the capacity to cooperate and work in a team, the independent organisation of learning, problem-solving skills, the ability to handle money matters, a good grasp of economic principles, the ability to give an account of one's own activities, and basic knowledge of and ability to use technical constructs.

Acquisition of key competencies

The above definition of cross-curricular competencies does not provide for teaching them as a separate subject or the establishment of special courses for the acquisition of individual key competencies. The current trend in German curricular policy, however, reflects an increasing emphasis on the following:

- cross-curricular issues;
- teaching and learning methods that call for and foster independent learning and sustainable, constructive knowledge;
- core curricula that comprise basic knowledge and skills;
- operational and thinking skills related to certain specific areas as well as to attitudes.

The selection of competencies and the way in which they should be developed vary from one *Land* to the next. Imparting basic or key competencies may however be considered the guiding principle of teaching in all *Länder*. This activity is as much embedded in the teaching of subject-specific content as in cross-curricular learning and teaching. An aspect common to all approaches is the changing role of teachers who now concentrate more on what they can do to guide and advise pupils when designing their own learning processes, than on relaying factual information. This new role assumed by teachers is of special significance in developing the media competence of pupils with the help of information and communication technology (ICT). Work on this competence is not limited to the teaching of informatics, but an integral part of teaching in various subjects. It covers not only the technical aspects of ICT but also analyses the sociological consequences of their use.

Compulsory subjects and their contribution to the development of key competencies

Development of key competencies is at the heart of teaching in all subjects and subject areas. The 1993 KMK agreement (amended in 1996) on types of schools and courses in lower secondary education, lays down a framework timetable for years 5 to 10, which requires that certain core subjects should be taught in every type of school and course, namely German, mathematics, one foreign language and natural and social sciences. Music, art and sport, at the very least, have to be among the other compulsory or elective subjects on offer. A second foreign language is mandatory at the *Gymnasium* ([20]) from the age of 12 onwards and must

([19]) Type of school at lower secondary level providing basic general education. It is compulsory unless pupils are attending a different type of secondary school, usually comprising levels 5-9.

([20]) Type of school covering both lower and upper secondary level (usually grades 5-13) and providing an in-depth general education aimed at the general higher education entrance qualification.

be offered as a core curriculum option in the *Realschule* ([21]). An 'introduction to the professional and working world' is a compulsory component in every course and is provided either via a special subject such as *Arbeitslehre* (pre-vocational studies) or within other subjects. Religious education is subject to the regulations in individual *Länder*, in nearly all of which religion is a standard subject.

The identification of key qualifications which are supposed to be gained in the course of compulsory schooling and the guarantee that these qualifications are gained in the specified types of school and subjects are based, on the one hand, on the decisions taken by the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* (KMK) serving as recommendations for the *Länder* and, on the other hand, on the respective School Acts, curricula and timetables of the individual *Länder*. Traditionally, these form the basis for teaching, setting out the aims, content and methods of teaching and learning in individual subjects.

Revisions of curricula in recent years have not only focused on imparting sound *Sachkompetenz* (subject-specific competence), but also on relaying key competencies or key qualifications. In this context, certain types of teaching, such as learning through discovery and understanding by doing, open teaching, a weekly work plan, free work or even pupils' enterprises, are deemed particularly conducive to the acquisition of key qualifications. In teaching environments of these kinds, the emphasis is less on instruction and the abstract relaying of knowledge and students are given the opportunity to try things out and show what they can do. They can follow the objectives of their actions and learning from the conceptual stage through to the level of realisation. Mistakes are not punished with bad marks, but rather serve as learning opportunities (Thoma 2001), and teaching staff are called upon much more to act as advisors or moderators than as conveyers of subject-specific knowledge.

Measurement, assessment and certification of key competencies

There is general agreement among German educationalists that acquisition of key competencies cannot be measured in the same way as traditional educational attainment. In the PISA 2000 study, however, Germany tested the measurement of cross-curricular competencies like problem-solving, self-regulated learning and social competence. Communication and cooperation for example were assessed by combining two separate approaches, the 'self concept' of pupils in certain competencies on the one hand and external assessment by teachers and classmates on the other. In addition to measuring outcomes, the new generation of tests must also be able to evaluate the operational approach and different strategies employed by the learner. Tests must measure the quality of interaction with a constantly changing environment. Assessment of cross-curricular competencies is also impeded by the fact that it is difficult to distinguish them from subject-specific competencies. In recent years, all these factors have intensified the search for methods and instruments for the assessment of individual achievements in general competencies. This has so far resulted in more complex examination papers requiring pupils not only

([21]) Type of school at lower secondary level, usually comprising grades 5-10. Provides pupils with a more extensive general education and the opportunity to go on to courses at upper secondary level that lead to vocational or higher education qualifications.

to reproduce acquired knowledge but also to explain how and why they arrived at their answers. Pupil attainment is recorded in certificates issued in the middle and at the end of the year.

In years 1 and 2 of primary school, learning attainment is recorded in the form of verbal reports describing the attitude of pupils to learning, as well as their concentration, interest and motivation, social behaviour, objective-oriented learning, diligence, comprehension and ability to express themselves. It follows that evaluation of certain key competencies is specifically provided for in the first two years of schooling. Grades, on a scale from 1 to 6, (with 6 referring to an insufficient level of achievement) are awarded from year 3 onwards. In addition to subject-specific knowledge and skills, assessment of attitudes to work, learning and social behaviour is now an accepted part of evaluation in the great majority of *Länder*. The assessment of these competencies forms part of the official school report although it is sometimes recorded in an annexe to it.

Standards for key competencies

Standards, which are part of the curriculum, have been established for knowledge and competencies in specific subjects but not for general competencies. At the end of lower secondary education (year 9/10), pupil attainment is assessed in a school-leaving examination. Agreements signed within the KMK, such as the *Standards für den Mittleren Schulabschluss* ([22]) *in den Fächern Deutsch, Mathematik und erste Fremdsprache,* 1995 (Standards for the general education school leaving certificate in German, Mathematics and the First Foreign Language, 1995) ensure mutual recognition of the associated school-leaving certificates by all *Länder*.

In an effort to raise educational quality across Germany, in May 2002 the KMK adopted a resolution to introduce national educational standards. They relate to the core subjects German, mathematics and first foreign language, and are to be introduced over the next two years to become binding in all *Länder* with effect from 2004. Two types of standard have been established: first, the uniform test requirements for the school-leaving certificate and, secondly, standards that should be attained on completion of certain years of schooling. The above-mentioned standards for the *Mittlerer Schulabschluss* are to be revised by 2003 with additional standards introduced for the *Hauptschule* by 2004. Compliance with them will be checked by means of regular uniform tests which should also help to ensure that pupils receive the necessary support in reaching the national standards.

Support for pupils with special educational needs

Under the 1971 Hamburg Agreement between the *Länder* on harmonisation of the school system, the basic school structure characterising all *Länder* enabled a clear distinction to be made between mainstream schools and special schools. Since the 1980s, disabled pupils have been increasingly integrated into general schools in school pilot projects, some of which have

([22]) General education school leaving certificate obtained on completion of grade 10 at *Realschulen* or, under certain circumstances, in other types of lower secondary education. The certificate can also be obtained at a later stage during vocational training at upper secondary level.

become a standard type of schooling since 1990. A new understanding of disabilities and educational needs arising from physical or mental disability or a disadvantaged background, as well as improved diagnosis and more effective systems for early detection and prevention, have shifted the focus from education of disabled pupils in special schools to their integration within mainstream schools.

In 1994, an agreement signed within the KMK, *Empfehlungen zur sonderpädagogischen Förderung in den Schulen der Bundesrepublik Deutschland* (Recommendations concerning special educational support in schools in the Federal Republic of Germany) underlines that schools are expected to offer individual support as well as therapeutic, social and psychological aids. As a result, diverse forms of institutional and educational cooperation between mainstream and special schools have recently been developed. Some are part of schools' pilot projects or action programmes run by the *Länder*. They range from joint extra-curricular activities and joint lessons to the sharing of classrooms. The aim is to promote the integration of the disabled and to provide all pupils irrespective of their physical and mental capabilities with the opportunity for closer contact and easier mutual relations. In this way the acquisition of key competencies has become an integral part of the education of disabled pupils.

Participation in international assessment studies of key competencies

The *Länder* are taking part in international comparative studies such as the Third International Mathematics and Science Study (TIMSS) and the OECD project entitled *Programme for International Student Assessment* (PISA) as a means of establishing pupils' performance. The general objective of the OECD project is to provide OECD states with indicators concerning the knowledge, skills and abilities of 15-year-old pupils in the areas of reading, mathematics and sciences. In addition, cross-curricular competencies necessary for methodical, self-regulated and cooperative learning or working are determined. The results are interpreted taking account of socio-demographic features, as well as the learning opportunities and interaction processes in schools. The survey covers three overlapping cycles. A consortium led by the Max Planck Institute for Human Development and Education in Berlin has been commissioned as national project manager by the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* to carry out the first cycle of the OECD project, which focuses on the determination of reading literacy. Following publication of the results in December 2001, the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* named seven areas in which the *Länder* and the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* will act. These include the improvement of primary education, as well as the further professionalisation of the teaching profession.

Following the TIMSS study, the *Länder* introduced a series of measures. Further action is to be established during the course of 2002. This is supported by the results of so-called national options, which supplement the international investigation. The national extension involves the recording of additional subjects and problems and a considerable extension of the sampling. These qualitative and quantitative extensions mean that the study can be used for comparison between the *Länder*. A consortium headed by the *Institut für die Pädagogik der Naturwissenschaften*, or IPN (Institute for Science Education) in Kiel was commissioned by the

Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* with the national project management of the second cycle focusing on mathematical literacy.

In addition to these investigations that refer to the secondary level, Germany also participates in the Progress in International Reading Literacy Study (PIRLS) international reading study for fourth grade pupils. The study was conducted mainly during the summer of 2001.

Latest developments in relation to key competencies

The *Bund-Länder-Kommission,* BLK (Federation-*Länder* Commission) has initiated several pilot projects, including the following:

- *Qualitätsverbesserung in Schulen und Schulsystemen* – QuiSS (Quality improvement in schools and school systems);
- *Steigerung der Effizienz des mathematisch-naturwissenschaftlichen Unterrichts,* SINUS (Strengthening the efficiency of mathematics and science teaching);
- *Bildung für eine nachhaltige Entwicklung '21* (Education for sustainable development' 21);
- *Demokratie lernen und leben* (Learning and living democracy).

Under the QuiSS, Baden-Württemberg has established a pilot project on the internal and external evaluation of key qualifications, ESQ, *(Interne und externe Evaluation von Schlüsselqualifikationen*). Conducted in 14 secondary schools over two school years (2000/01 and 2001/02), the project has sought to identify or establish methods of evaluation that yield information on the acquisition of cross-curricular competencies among pupils. Each of the eight general key qualifications selected is assessed with the help of two indicators. Contrary to the assessment of key qualifications in the world of work, the purpose of assessments is not selection but identification of the need for educational support experienced by certain pupils.

In addition, all *Länder* have agreed to introduce uniform educational standards by 2004. (For more details concerning these standards please refer to the section on standards for key competencies.)

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GREECE

In Greece, according to the Constitution (Article 16 §2) 'Education constitutes the main mission of the State aiming at the moral, mental, professional and physical education of Greeks, the development of their national and religious conscience as well as their growth into free and responsible citizens'.

Terms used to express the notion of key competence

The term key competence is neither used in legislative texts nor in related policy papers. The closest Greek educational terminology gets to the notion of key competence is by referring to **the intellectual and physical capabilities *(dynatotites)***. Law 1566/85 states that the main aim of primary and secondary education is to 'contribute to the complete, harmonious and balanced development of the intellectual and physical capabilities of pupils in order to enable them to evolve into well-rounded personalities able to lead creative lives.' The law stresses the importance of balanced personal development, rather than one-sided development (as, for example, in excessive emphasis on its intellectual dimension).

Selection of key competencies to be acquired by the end of compulsory education

After formulating the general purpose of education, Law 1566/85 refers to the more specific aims of education. They include development of the personality and love for other human beings, life and nature; the promotion of creativity and critical thinking; understanding of art and technology; and the development of a spirit of friendship and cooperation with other nations, etc. Within individual curricula, these objectives are further broken down into subject-specific targets.

The general aims of education are applicable to all educational levels and can be classified into three main dimensions:

- **Knowledge and methodology**
  This is focused on knowledge, intellectual skills, operational skills and skills of a methodological nature that pupils must have acquired through the teaching of each subject when completing each level of education.
- **Cooperation and communication**
  This dimension is focused on social skills that pupils must develop in the context of collective projects as well as on the communication competencies and skills needed to convey thoughts, views, information, etc.
- **Interrelation between science or art and everyday life**
  This is focused on the development of awareness, and the ability to question and deal with the (positive and negative) impact of the applications of science and art in different areas of human activity.

Some skills *(dexiotites)* are associated with a single subject or a group of closely related subjects (subject-specific skills), while others are concerned with a full range of independent subjects

and, as such, support effective study of all of them throughout all levels of education (cross-curricular skills). Subject-specific skills are listed in the Framework for Curricula (PS), while cross-curricular skills are defined in the Cross-curricular Single Framework for Curricula (DEPSS). The latter is considered to be the overarching framework towards which all individual subject curricula must converge. Both frameworks are in the process of being finalised and should form the basis for the next generation of textbooks.

Development of the following cross-curricular skills is prescribed by all subject-specific curricula (Official Journal 1366/2000):

- the skills needed to communicate (speaking, listening, reading, writing, ability to argue logically, conversational skills) and the efficient use of figures and mathematical concepts in everyday life;
- the skills involved in using various information sources and tools for identification, analysis, evaluation and presentation of information on the one hand, and protection against 'data pollution' on the other;
- the skills required in order to cooperate with other individuals in collective work, through respect, recognition, optimal social interaction and the acquisition of social skills;
- the skills needed to improve individual performance and participation through reflection and problem-solving. This process is supported by means of critical assessment of the work of pupils in accordance with internal and external criteria, control, feedback and corrective intervention, and by developing the necessary skills and planning strategies;
- the skill involved in making rational choices (at personal and social level) in areas such as environmental protection;
- the skill needed to manage natural, financial and social resources;
- the skill required to use knowledge and ability to protect health at individual and social level;
- the skills of creative invention and a 'sensitive conception of art', and the positive acceptance and creation of works of art;
- the use of knowledge and the adoption of values to shape the personal views needed for decision-making;
- the skill to critically examine information, values and beliefs.

Acquisition of key competencies

The Greek education system attaches considerable importance to the development of cross-curricular competencies. This holistic approach to knowledge ensures that pupils develop the necessary competencies for effective analysis and treatment of the issues and problems that arise in everyday life.

Besides defining the competencies to be taught, curricula also contain guidelines on teaching methodology and teaching tools. Teaching must be organised in such a way as to support the achievement of goals relating to subject-specific and cross-curricular skills/competencies. It constitutes a single and continuous creative process that helps pupils discover knowledge by themselves, encourages and trains them to take initiative, conduct research, and assume control their learning environment. The following teaching strategies are recommended:

- learning through examination and discovery (active approach to knowledge),
- visits to the environment (natural or human),
- interactive dialogue between teacher and pupils,
- narration.

According to DEPPS principles, there must be correspondence between the syllabi and teaching methods and tools. In teaching, the 'what' (cognitive subject) must not be separated from the 'how' (method and means). Only the combination of the two can turn a cognitive subject into an educational 'good' for pupils.

It is more important for pupils 'to learn how to learn' than to simply learn and in particular for them 'to learn by doing' through experience and participation. Pupils learn to speak by speaking, to write by writing, how to operate a machine by studying its design and helping to operate it. Theory and practice go hand in hand.

The cross-curricular and holistic approach to knowledge is necessary for developing the competence of pupils in such a way that they can effectively handle the issues and problems that arise in everyday life. By devoting less time to the teaching of subject-specific knowledge and more to the importance of cross-curricular issues, this approach makes the best possible use of school time.

Compulsory subjects and their contribution to the development of key competencies

Teaching of the following subjects is mandatory during compulsory education: Greek, mathematics, physics, religious education, history, physical education, environmental education and art. The objectives to be attained in each subject are defined in line with the three general dimensions discussed above.

Measurement, assessment and certification of key competencies

The Greek education system defines assessment as 'a systematic process verifying the extent to which the objectives and special goals of the system have been achieved' (Presidential Decree 8/95-OG 3 A'21 and Presidential Decree 409/OG 226/22-12-1994). The results of this process can be used to improve the process of teaching/learning. Not only is assessment concerned with the individual performance of pupils in different subjects; it also takes into

consideration other aspects such as their effort, interest, initiative, creativity, ability to cooperate with others and compliance with school rules.

It follows that assessment is not solely focused on evaluating the knowledge of pupils. It also takes account of their performance in social skills, their communication competence and critical consideration of the positive and negative impact of the applications of science and art on human life. The assessment of cognitive skills is compulsory and is conducted through formal procedures. Evaluation of communication competence is formal and compulsory as far as language subjects are concerned but is also part of the assessment of other subjects. Other skills, in contrast, such as social skills and those pertaining to critical consideration of the applications of science and art are not subject to any formal assessment, even though they are taken into account when assessing the overall performance of pupils during the school year.

It follows that assessment may be regarded as the evaluation of three distinct groups of skills: cognitive skills, operational skills and methodological skills. Cognitive skills assessment is compulsory in all subjects in compulsory education. It focuses on the evaluation of language skills in the mother tongue and foreign languages, mathematical skills, and skills in science and history. Assessment of operational skills in primary education is concerned with establishing whether pupils are able to handle simple materials and tools in order to express themselves artistically. In secondary education, this type of evaluation is concerned with assessing the skills of pupils as regards the operation of computers and their peripherals. Assessment of methodological skills aims to establish whether pupils can apply different approaches to solving a problem. It also seeks to determine whether they have developed the skills of analysis and synthesis, and are able to conduct and observe the outcome of laboratory tests and scientific experiments, and critically examine sources of information.

According to Presidential Decree 8/95, pupils in compulsory education are assessed individually at school by their teacher(s). Nevertheless, the Pedagogical Institute and other academic bodies attached to the Ministry of National Education and Religious Affairs are entitled periodically to conduct examinations or surveys either to evaluate the effectiveness of education at national and regional level, or for other educational purposes.

At primary school, there is no standardised assessment process and pupils are evaluated at class level by the class teacher(s). The certificate awarded at the end of the sixth year of primary education is of no specific significance. Its sole purpose is to enable pupils to enrol in lower secondary education, which is the continuation of compulsory education. Assessment at *gymnasia* (lower secondary schools) is also conducted by the teachers. On completing the final year, pupils obtain a *apolytirion gymnasiou* (certificate of completion). Those who have been unable to obtain the grades needed for the school-leaving certificate during the first session of exams are allowed to repeat the examinations as often as necessary to obtain the required results.

Standards for key competencies

There are no centrally set standards for assessment in compulsory education. Pupils are only evaluated by their teacher(s).

Support for pupils with special educational needs

In an effort to ensure equal opportunities in education and fight social exclusion, pupils with learning difficulties can receive additional support under Presidential Decree 429/91. This takes the form of support teaching, which is provided at the suggestion of the pupil's teacher(s) and subject to approval of the teachers council. Special support programmes are available in the following subjects: language, mathematics, physics, chemistry and foreign languages. The programme in question begins at the start of the second term. Help is also available for pupils who are not Greek nationals, for gypsy children and for Greek children returning to Greece after a period abroad.

Participation in international assessment studies of key competencies

Greece has participated in various studies conducted by the IEA (CIVED, RLS, PIRLS, TIMSS, COMPED) and the PISA international survey under the auspices of the OECD.

Latest developments in relation to key competencies

A project to introduce new information and communication technology (ICT) and improve computer literacy has just been launched in primary schools. In its initial stage, schools were asked to state their needs regarding the supply of personal computers and the retraining of teaching staff in this field. At the same time, considerable effort is being devoted to editing software programmes in Greek and (re)training teachers in ICT.

A pilot scheme involving a certain number of pre-primary, primary and lower secondary schools is testing the introduction of a 'flexible zone' into the school timetable. This scheme sets aside two to four lessons a week for cross-curricular activities. In primary education, the zone is meant to promote initiative, cooperation and critical thinking, etc. In secondary education, the flexible zone is called a zone for innovative activities and is supposed to support the acquisition of subject-specific competencies. The main aim is to develop communication competence (speaking, listening, reading, writing, ability to argue logically, interactive communication), skill in using figures and mathematical concepts, the responsible use of ICT, cooperation, the skill needed to improve individual performance, problem-solving, rational decision-making, resource management, health protection, inventiveness, artistic judgement, the expression of personal opinions, social skills and criticism.

SPAIN

The Spanish education system is governed by three fundamental principles:

- fostering the comprehensive development of individuals,
- attaining full development of their personality,
- contributing to the creation of a fairer more supportive society.

These principles are translated into general objectives which, in turn, are expressed in the form of *capacidades* (abilities) to be acquired.

Terms used to express the notion of key competence

The term *competencia* (competence) is used in the context of employment, but does not feature in the terminology for general education. The latter uses the term ***capacidad* (ability)** when referring to the educational outcome at the end of compulsory education. Although there is no official definition of *capacidad* it can be interpreted as the potential or aptitude inherent in every person to acquire new knowledge and skills, i.e. the capacity that all human beings have and are able to develop and which allows them to learn on their own throughout life. The objective is not to reach a predefined level as regards these abilities but to guide learners on their path of lifelong learning. The abilities to be developed during compulsory education must therefore be of relevance for life after school when individuals take charge of their own further learning.

Capacidades are the constituent parts of people's personalities. Their development is one of the main objectives of education as stipulated in the *Ley Orgánica de Ordenación General del Sistema Educativo,* or LOGSE (Basic Law on the General Structure and Organisation of the Education System of 1990). The same law defines the curriculum as the objectives, content, teaching methods and evaluation criteria of education. It stipulates that the curriculum should not only ensure the acquisition of knowledge and concepts, but support an education that stimulates all abilities possessed by pupils. The content of the curriculum is chosen so as to develop these capacidades as effectively as possible. Curricular content has three defining characteristics: concepts, procedures and attitudes. Concepts refer to factual information and principles, procedures represent operational knowledge or know-how and attitudes are understood to be the rules and values governing science and life in society, which add a moral dimension to education.

Selection of key competencies to be acquired by the end of compulsory education

The Spanish education system distinguishes between abilities to be developed by the end of primary education and the end of compulsory secondary education, respectively. The LOGSE states that primary education shall help to develop in children the ability to:

- use the Spanish language and the official language of their Autonomous Community correctly;

- understand and express simple messages in a foreign language;
- apply simple arithmetic and elementary logic to everyday life situations;
- acquire the skills needed to act independently in their families and domestic surroundings, as well as in the social groups with which they interrelate;
- appreciate the basic values that govern human life and coexistence and act in accordance with them;
- use different means of representation and artistic expression;
- become familiar with the basic characteristics of their physical, social and cultural environment, and scope for action within it;
- appreciate personal hygiene and bodily health, as well as the preservation of nature and the environment;
- use physical education and sport to encourage personal development.

The 11 abilities which are described in the LOGSE and should be developed throughout compulsory secondary education, are the ability of pupils to:

- understand and correctly reproduce complex oral and written texts and messages in Spanish and, where applicable, in the language of their Autonomous Community;
- understand a foreign language and reproduce it as required;
- make use of different sources of information and content in a critical way, and acquire fresh knowledge by themselves;
- behave in a spirit of cooperation, moral responsibility, solidarity and tolerance, respecting the principle of non-discrimination;
- become familiar with art and culture and appreciate and respect them;
- analyse the main factors that influence society and become familiar with the basic laws of nature;
- understand the practical dimension of knowledge and acquire basic preparation in the field of technology;
- become familiar with the basic beliefs, attitudes and values of our tradition and cultural heritage, assessing them critically and choosing those options which are most favourable to their overall development as individuals;
- appraise social habits related to health, consumer behaviour and the environment;
- become familiar with the social, natural and cultural environment in which they act and use it as a means of development;
- use physical education and sports as a means of personal development.

Acquisition of key competencies

As explained earlier, the core curriculum does not merely specify what should be the objectives and content of teaching. It also indicates the approach to teaching best suited to development of the necessary abilities. The LOGSE states that, in primary and compulsory secondary education, the methodology of teaching should be conducive to the well-rounded development of pupils, integrating their different experiences and learning activities, and that education should be individually oriented and adapted to each child's pace of learning. Teaching methods should be geared to each pupil's needs, and foster their ability to learn independently as well as to work in teams. The principles meant to underlie teaching are clearly specified by the Ministry of Education and Science (MEC, 1989b) and based on the constructivist approach. They require that the starting point is the level of development of individual pupils, and that account must be taken of their cognitive skills (corresponding to their stage of development) and the concepts they have already assimilated. The guidelines state that learning should become an integral part of the cognitive awareness of pupils and be more than just memorisation, and that they should acquire the ability to learn how to learn. The guidelines further stress that content must be both applicable to real life situations and useful for undertaking further learning. Finally, teaching must encourage intense activity on the part of pupils, which involves establishing relations between new content and prior conceptual elements. In this regard, the teacher's role is to act as a mediator and facilitate the development of significant learning.

Official education documents (curricula, guidelines, etc.) also refer to measures intended to develop problem-solving, and critical and creative thinking skills that support for learning to learn. Using the above-mentioned principles, educational institutions develop curricular projects and classroom programmes which determine the methodology to be employed. The choice of methodology is also determined by the special characteristics of each class.

Compulsory subjects and their contribution to the development of key competencies

The LOGSE defines the following key curricular areas for primary education: knowledge of the natural, social and cultural environment, artistic education, physical education, Spanish language and literature, the co-official language and literature of the Autonomous Community concerned, foreign languages, mathematics, and religion ([23]). According to the core curriculum, a foreign language is compulsory from the second stage of primary education, but most Autonomous Communities make a foreign language mandatory in as early as the first stage.

The common core curriculum for compulsory secondary education (ESO) makes the study of the following subject areas mandatory for all pupils: natural science, physical education, artistic education, social studies, geography and history (including moral life and ethical reflection), foreign languages, Spanish language and literature, the co-official language and literature of the Autonomous Community concerned, mathematics, technology, music, religion ([23])

([23]) Schools must offer this area, but pupils may take it on a voluntary basis.

and cross-curricular topics. In the final year, the moral life and ethical reflection block of contents is made separate from social studies, history and geography and added as an independent subject area, under the name of ethics. Pupils at this level also receive basic vocational training, which adds a practical dimension to their schooling and is intended to prepare them for the transition to working life. The vocational abilities taught in this context can be considered to represent the key competence of entrepreneurship. An element of choice is introduced in the final year when pupils have to choose two out of the four following areas: natural sciences, visual and plastic education, music and technology.

The common core curriculum ([24]) for compulsory secondary education (established by Royal Decree 1007/1991 of 14 June, BOE 26-6-1991) has recently been modified by Royal Decree 3473/2000 of 29 December (BOE 16-1-2001). The new regulations are to be gradually implemented between school years 2002/03 and 2003/04 and will bring about a number of changes. One of them is the introduction of information and communication technology (ICT) as a separate component within the technology subject area and as a tool for teaching language and literature, and music.

FIGURE 7: MAIN DIFFERENCES BETWEEN THE COMMON CORE CURRICULA FOR COMPULSORY SECONDARY EDUCATION ESTABLISHED IN 1991 AND 2000

Royal Decree 1007/1991	Royal Decree 3473/2000
Evaluation parameters and criteria established for the entire stage.	Evaluation parameters and criteria established for each year of the stage concerned.
Number of hours allocated to the following two main subjects of the first stage: Spanish language and literature 210 Mathematics 140	Number of hours allocated to the following two main subjects of the first stage: Spanish language and literature 245 Mathematics 175
Classical culture is offered as an optional subject at least during one year of the second stage.	Classical culture has to be offered as an optional subject during both years of the second stage.
The teaching contents of the optional subjects, second foreign language and classical culture, are not defined.	Inclusion of the basic teaching contents of the optional subjects, second foreign language and classical culture.
No explicit mention of ICT.	Introduction of ICT as a separate component (in the technology subject area) and as a learning and teaching tool for other subjects.
The separate assessment of biology and geology, and physics and chemistry is only provided in the fourth year.	The separate assessment of biology and geology, and physics and chemistry, is extended to the third year when the natural sciences subject area is split into two separate areas.

Source: Centre for Educational Research and Documentation (CIDE), with reference to the regulations.

([24]) The core curriculum laid down by the government for the entire country represents 55 % of the school timetable for Autonomous Communities that have an official language other than Spanish, and 65 % for those that do not.

The future Act on Quality plans to introduce a series of measures that will focus on bringing the Spanish education system into line with European Union educational priorities. These measures are principally targeted at compulsory secondary education and include provisions intended to increase the number of options for training pathways and modify the assessment of academic performance.

Besides the above-mentioned subject areas, all educational institutions must also offer some form of religious instruction. Parents decide whether to send their children to these classes, or to opt for alternative activities that encourage reflection on various aspects of social and cultural life.

All subject areas mentioned above contribute to the development of some or all of the *capacidades*. In compulsory secondary education, one hour a week must be devoted to counselling activities *(tutoría)* over and above the time reserved for subject-oriented teaching. These activities focus on the development of interpersonal and personal skills by teaching pupils to be responsible individuals, live together peacefully and behave in a socially acceptable manner. Figures 2 and 3 try to illustrate their relative importance.

In response to public demand, ethical values and other cross-curricular topics have also been introduced into the core curriculum. Examples of such topics are education in civics, environmental education, sex education, consumer education, road safety conduct, education for human rights and peace, health education, gender education, etc. Depending on its needs and experience, each school decides how much emphasis to place on these cross-curricular topics.

Measurement, assessment and certification of key competencies

The Royal Decrees establishing the minimum core curriculum specify, with the aim of developing the abilities referred to by the LOGSE, the fundamental objectives of education. Because of difficulty in assessing the abilities themselves, evaluation focuses on assessing the extent to which these objectives have been achieved. The reasoning is that the higher the level of attainment, the more successful will the acquisition of the *capacidades* be. Objectives and assessment criteria are clearly specified in the core curriculum and the curricula issued by the Autonomous Communities. The conditions and content of teaching as well as the characteristics of individual pupils are also taken into account during this process. Schools are free to adapt objectives and criteria to local requirements as long as the full range of abilities is not compromised.

Although conceived as a continuous process, assessment is also prescribed at certain points in time during compulsory education. In primary education, teachers use continuous assessment to determine whether certain pupils would benefit from supplementary supporting measures or an adaptation to the curriculum. Evaluation is mandatory at the end of each stage when it determines whether a pupil is promoted to the next stage or must repeat a year.

In compulsory secondary education, promotion to and within the second stage is based on assessment. The decisive criterion is the rating of a pupil's chances of successfully continuing his or her education, with due regard for abilities already acquired. If necessary the curriculum may be adapted to pupils' individual needs.

FIGURE 8: SUBJECT AREAS IN THE COMMON CORE CURRICULUM FOR PRIMARY EDUCATION AND THE ABILITIES THEY ARE MEANT TO FOSTER, SCHOOL YEAR 2001/02

Abilities to be developed	Subject areas						
	Natural science	Artistic education	Physical education	Spanish and co-official languages and their literature	Foreign languages	Mathematics	Religion
Appropriate use of the Spanish language and the official language of the Autonomous Community concerned.	•	•		•			
Understanding and communication of simple messages in a foreign language.					•		
Application of simple arithmetic and elementary logic to everyday situations.						•	
The skills needed to act independently in family and domestic surroundings, as well as in the social groups with which pupils interrelate.	•	•	•	•		•	
Appreciation of the basic values that govern human life and co-existence and the ability to act in accordance with them.	•	•		•	•	•	•
Use of different means of representation and artistic expression.		•		•			
Familiarity on the part of pupils with the basic characteristics of their physical, social and cultural environment, and scope for action within it.	•	•	•	•		•	•
Appreciation of bodily hygiene and health, as well as preservation of nature and the environment.	•		•				
Use of physical education and sport to encourage personal development.			•				

Source: Centre for Educational Research and Documentation (CIDE), with reference to the regulations.

Assessment is always carried out by the team of teachers concerned who, in secondary education, are advised by the Guidance Department. At the end of compulsory secondary education, pupils who have attained all objectives are awarded the *Graduado en Educación Secundaria* (Secondary Education Certificate). This qualifies them for access to Baccalaureate and Intermediate Specific Vocational Training. A teaching team, which is coordinated by the pupil's form teacher and guided by the school's counselling department, may nominate certain pupils for the certificate even though they have not reached the required grade in any one of the subject areas, provided that, in general terms, they have reached the objectives for the

FIGURE 9: SUBJECT AREAS IN THE COMMON CORE CURRICULUM FOR COMPULSORY SECONDARY EDUCATION (ESO) AND THE ABILITIES THEY ARE MEANT TO FOSTER, SCHOOL YEAR 2001/02

Abilities to be developed	Subject areas									
	Natural science	Physical education	Artistic education	Social studies, geography, history	Foreign languages	Spanish and co-official language and their literature	Mathematics	Technology	Music	Religion
Understanding and correctly reproducing complex oral and written texts and messages in the Spanish language and the official language of the Autonomous Community concerned.	•	•	•		•					•
Understanding a foreign language and reproducing it as required.			•			•				
Use by pupils of different sources of information and content in a critical way, and acquisition of fresh knowledge by themselves.	•	•	•		•	•	•	•	•	•
Behaving in a spirit of cooperation, moral responsibility, solidarity and tolerance, respecting the principle of non-discrimination.	•	•	•	•	•	•		•	•	•
Becoming familiar with, valuing and respecting art and culture.		•	•		•	•		•		•
Analysing the main factors that influence society and becoming familiar with the basic laws of nature.	•	•							•	•
Understanding the practical dimension of knowledge and acquiring basic preparation in the field of technology.							•		•	
Becoming familiar with the basic beliefs, attitudes and values of our tradition and cultural heritage, assessing them critically and choosing those options that are most favourable to their overall development as individuals.		•	•		•			•		•
Appraising social habits related to health, consumer behaviour and the environment.	•			•	•					
Becoming familiar with the social, natural and cultural environment in which they act and using it as a means of development.	•	•	•		•			•		•
Using physical education and sports as a means of personal development.	•		•	•						

Source: Centre for Educational Research and Documentation (CIDE), with reference to the regulations.

stage concerned. In addition, all pupils receive written confirmation of the number of years of study, their grades in the different subject areas and confidential advice regarding their academic and professional future.

At national level, implementation of the core curriculum and mastery of the abilities prescribed in it are monitored by the *Instituto Nacional de Calidad y Evaluación*, or INCE (National Institute for Quality and Evaluation). At regional level, evaluation of the education system is the task of the Autonomous Communities. Both the INCE and the Communities have established a system of indicators that enables them to monitor the acquisition of abilities at different educational levels and stages more effectively, and to evaluate the overall effectiveness of the education system. They are currently trying to create a group of quality indicators that could be applied nation-wide.

Standards for key competencies

There are no national standards for any of the capacidades pupils should develop by the end of compulsory education.

Support for pupils with special educational needs

The Spanish education system has been designed with the flexibility needed to ensure that all pupils, irrespective of their social and economic background and their intellectual capacity, are in a position to develop the required abilities. The LOGSE stipulates that the education system is to be endowed with all the resources required for pupils with temporary or permanent special educational needs to develop the same abilities as those prescribed for pupils in general, either in a mainstream school or an institution for special education. General measures to accommodate a heterogeneous school population include a curriculum worked out at various levels (those of central government, the Autonomous Community, the school and the classroom); the optional character of certain subject areas; reinforcement and support activities (with a focus on mathematics and language); and the establishment of specific learning groups. These measures are supplemented by those designed to compensate for inequalities in the school population. In such cases, the curriculum can be adapted to individual needs, supplementary instruction given by support teachers, repetition of a year by pupils, or their transfer to a special education unit inside or outside mainstream schools.

Participation in international assessment studies of key competencies

Spain started to participate in international assessment projects during the 1980s. It is collaborating in INES, and has taken part in PISA 2000 and in the Third International Mathematics and Science Study (TIMSS) study.

Latest developments in relation to key competencies

Certain changes as regards teaching of the main subjects have been introduced into the core curriculum by Royal Decree 3473/2000 (for further details see Figure 7). In 2000, the Autonomous Community of Catalonia published a document entitled *Identificació de les competències básiques en l'ensenyament obligatori* (the identification of basic competencies in

compulsory education) which presents the results of a study carried out in Catalonia, the Balearic and the Canary Islands. The study examines the core curriculum and groups the abilities into five key areas – mathematical, social, linguistic, technological and the workplace. It also sets out the curricular content related to these areas, which is defined in the form of competencies to be acquired. In addition, the study includes the findings of a survey carried out among representatives of various social groups in order to identify the key competencies pupils should have acquired by the end of compulsory education. The survey asked participants to establish their personal ranking of key competencies, as a result of which 245 such competencies were identified with the highest priority given to the four basic operations involved in calculation (addition, subtraction, multiplication and division). On the basis of this survey, the study further attempted to determine which key competencies provide grounds for predicting future success in life. Then, in 2001 and 2002, pupil achievements in these competencies were assessed. The excellent results obtained in the case of certain of the latter suggested that society attaches the greatest importance to teaching those competencies that are work related.

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Terms used to express the notion of key competence

Primary school curricula, as those of the *collège* ([25]), specify in detail the 'competencies' that pupils should acquire in each subject at the end of each stage of education, and do so in exceptional detail at the end of primary education.

Selection of key competencies to be acquired by the end of compulsory education

The curricula for subjects taught throughout compulsory education specify many 'competencies' to be acquired and make particular reference to three of them, namely **writing, reading** and **arithmetics**. Yet **proficiency in language skills and the French language** appears as a priority throughout the whole of primary and secondary education, since it enables pupils to become steadily more autonomous in their school and personal intellectual activity. In this respect, language skills must be interpreted as the ability to express oneself and to communicate in all possible ways (e.g. modern languages, mathematics, information and communication technology). From the sixth till the third class of the *collège*, pupils begin to change from using a classroom style of communication with substantial support from their teacher to a more personal style enabling them to work more independently, particularly in reading. These competencies are thus undergoing development and are therefore fragile and not consolidated before the end of compulsory education. As a result, they are constantly being reshaped, irrespective of the educational activity, and have to be evaluated as a priority in all learning activity and regularly monitored.

The official curricula drawn up by the Ministry of Education specify the competencies that should be developed during compulsory schooling. These competencies fall into two groups, namely **general competencies** and **subject-specific competencies**, all of which are defined in relation to the priority competence 'proficiency in language skills'.

General competencies can be classified into two main categories, one relating to oral and the other to written communication.

- Knowing how to make use of verbal communication in the classroom:

  Speaking in public is always a difficult activity (fear of how others will react, the opinion of adults, inhibitions, socio-cultural traditions, etc.). Command of oral communication should under no circumstances be restricted to the best pupils. It is therefore vital that situations activating these communication processes be offered regularly to all pupils, and handled with patience and determination.

- Acquisition of a better command of written communication in classroom activities:

  This general competence has two main components: being able to read in order to learn and acquiring initial competence in writing and drafting.

([25]) A state or private secondary school of lower level for all pupils having finished their primary education. Schooling in these institutions lasts four years, and the classes are the sixth, fifth, fourth and third classes in ascending order.

A special feature of the French education system is that it organises the development of subject-specific competencies around mastery of the general competence 'proficiency in language skills'. This means that, during compulsory education, all subjects are taught with the aim of developing the ability to speak, read and write. Subject-specific competencies have been defined for the following ten subject areas:

- civic education,
- literature,
- careful consideration of the French language,
- a foreign (or regional) language,
- history,
- geography,
- arithmetic and mathematics,
- experimental sciences and technology,
- artistic education,
- physical and sports education.

Out of all the special competencies associated with main subject areas, one new basic competence stands out concerned with mastery of computerised resources.

Acquisition of key competencies

The acquisition of specific competencies, subject by subject, by the end of each stage remains the constant aim of the education offered to pupils. Official curricula drawn up by the Ministry of Education, establish the competencies to be acquired. Individual teachers choose their own preferred method of teaching, as well as the text book(s) required.

Compulsory subjects and their contribution to the development of key competencies

All subject areas taught during compulsory schooling make an underlying contribution to the acquisition of competencies. Thus the aim of French language classes is to enable pupils to understand each text that they read or write, to arouse their interest in literary texts and works, to teach them to obtain information and appropriate knowledge for themselves and, finally, to introduce them to using different means of argument and persuasion.

Measurement, assessment and certification of key competencies

At the end of each year, competencies are assessed by one or more teachers. The certified assessment of compulsory education, which was formerly optional, is gradually enhancing the status of the national certificate awarded on satisfactory completion of *collège* schooling.

Furthermore, a national procedure for the compulsory assessment of all pupils has been systematically organised each year by the planning directorate of the Ministry of Education. Assessment takes place at two points of compulsory education: at the halfway stage in primary education when they are aged 8 and on entering *collège* at the age of 11. Assessment at the latter point focuses on the same subjects as at primary level, i.e. French and mathematics. These evaluations that take place at the beginning of the school year only serve as a tool for teachers to adjust their teaching methods.

Since 1994, the Ministry of Education also regularly has been assessing familiarity of pupils with civics and law and order. The information is collected with the help of questionnaires distributed to a representative sample of pupils aged 11. Questions relate to their knowledge of democracy and the political system.

Standards for key competencies

At present, there are neither national standards for assessing what pupils have achieved nor any regulations concerning marking procedures. Teachers set standards and assessment is generally based on the overall performance of pupils.

Support for pupils with special educational needs

Personalised supporting measures are arranged throughout schooling in the 'single *collège*' which enrols all young people usually aged between 11 and 15. Support is stepped up at schools in the *zones d'éducation prioritaire* – ZEP (priority education zones) ([26]).

Participation in international assessment studies of key competencies

France has participated in many international surveys, among them FIMS (1964), SIMS (1980-82), RLS (1989-95), TIMSS (1993-95), PIRLS (1999-2003), PISA (2000, 2003, 2006).

Latest developments in relation to key competencies

As regards the first two years of *collège*, a scheme known as *'itinéraires de découverte'* (pathways to discovery) was launched in 2001, planned for the second year of *collège* with effect from the start of the 2002/03 school year. These 'pathways to learning' should stimulate the interest of pupils by getting them involved in activities that encourage independent work on inter-disciplinary projects. Projects are characterised by pupils working autonomously and teachers working in teams, and by the way in which they are based on four thematic areas: nature and the human body, art and the humanities, languages and civilisation, and creation and techniques.

The projects are compulsory and 10 % of the timetable is devoted to them. Pupils have to follow four pathways selected from at least two thematic areas, with due regard for their preferences and natural abilities. Projects will enrich curricula by contributing to learning and the acquisi-

([26]) These are areas in which social conditions are such that they may compromise or even prevent successful schooling and social integration of children and adolescents living there. The aim of the priority education policy is to obtain significant improvement in the performance of schools in these areas.

tion of knowledge and skills in the various subject areas. At the start of the 2003/04 school year, projects will be introduced in the third year of *collège* and the final class assessment for that year will be a prior test for the new certificate of basic studies which is planned to replace the current national *collège* certificate.

Furthermore, as far as primary school is concerned, artistic and cultural education has been strengthened as a result of the 14 November 2000 national plan for the development of artistic and cultural education. Since the 2001/02 school year, classes 'committed to an artistic and cultural project' have been instituted in several *académies*. Artists or professionals in the cultural sector can be asked to contribute to classes which are so designated, as part of a joint educational project. This plan is soon to be extended to the first year of the *collège*.

Terms used to express the notion of key competence

At primary level, the term skill or key skill is being increasingly used. The term key competence is not used. **Key skills** refer to abilities, strategies and approaches which the child can use to advance his/her learning across the curriculum.

Similarly, in post-primary schooling, at lower secondary level, key competencies are generally described in terms of **skills**. These skills are embedded in the subject-based curriculum. They are stated explicitly in the syllabus and curriculum documents associated with the range of subjects offered at this level. There has been a certain amount of debate around the skills or key competence agenda at this level of the education system, although not so much as at upper secondary level.

Selection of key competencies to be acquired by the end of compulsory education

Skills development is a major part of the Primary School Curriculum. It states:

Strong emphasis is placed on developing the ability to question, to analyse, to investigate, to think critically, to solve problems, and to interact effectively with others.

Focusing on the development of skills facilitates the integration of learning and provides for the coherent planning and delivery of the curriculum. The following skills are an integral part of each curriculum area at primary level:

FIGURE 10: CROSS-CURRICULAR SKILLS DEVELOPMENT AT PRIMARY LEVEL, REFERENCE YEAR 2002

Critical thinking skills	such as analysing, observing, evaluating, summarising and problem-solving.
Learning skills	such as researching, information handling, self-assessment and target-setting.
Social and personal	such as skills self-awareness, making choices, making decisions and taking responsibility.
Communication skills	such as listening, speaking and emphasising.
Information and communications technology (ICT) skills	

Source: Eurydice, National Unit Ireland.

Special mention is given to higher-order thinking and problem-solving skills. These are summarised in the introduction to the Primary School Curriculum as observing, collating and summarising evidence, analysing, interpreting, evaluating, inferring and deducing.

In reviewing lower secondary education (Junior Cycle) as a whole, the need to place greater emphasis on the basic skills of literacy, working with number and communication, and the need to improve the assessment of pupil achievement in this context has been raised. Some discussion has also taken place on the role that more generic skills such as those of problem solving, decision-making, critical thinking should play in the curriculum at this level. With increased use of information and communication technologies in schools, the need to describe and provide for a certain level of pupil competence in the use of ICT has been identified. However, the perception of an 'overcrowded curriculum' is frequently cited as a limiting factor in any effort to place greater specific emphasis on these skills in schools.

The provision of key skills has featured in policy documents such as the *White Paper on Education Charting Our Education Future* (1995). This includes as essential educational experiences for pupils at this level:

- competence in literacy, numeracy and spoken language skills which will allow them to participate as young adults in society;
- competence and understanding in practical skills, including computer literacy and information technology.

Equally, the NCCA report *The Junior Cycle Review, Progress Report: Issues and Options for Development* (1999) acknowledges the importance of continuing to improve provision for key skills in the lower secondary curriculum and suggests that greater emphasis be placed on the development of these skills in the teaching, learning and assessment associated with the current curriculum. The report groups these skills under eight headings: communication and literacy skills, numeracy skills, manipulative skills, information technology skills, thinking and learning skills, problem-solving skills, personal and interpersonal skills, social skills. This report continues to form the basis for proposed reform of curriculum and assessment at lower secondary level.

Acquisition of key competencies

Ireland ensures the acquisition of skills in a variety of ways at each level of the education system. At primary level, the Inspectorate of the Department of Education and Science routinely evaluates the quality of teaching and learning.

As noted above, the Primary School Curriculum promotes the development of skills across each curriculum area. However, certain curriculum areas are particularly important in enabling this skill development. Literacy skills, including oral language skills are developed particularly in Language: English and *Gaeilge*. Numeracy skills including estimation, problem-solving, prediction, information handling, and so on, are developed in Mathematics. Skills of a social and personal nature are developed in Social, Personal and Health Education. Social, Environmental, and Scientific Education develops other skills such as analysing, recording and communication, evaluation, and investigative skills. At lower secondary level, skills are an integral part of the curriculum and the particular skills to be taught are specified in the syllabus and curriculum documents for each subject.

In general terms, while skills are integrated with the curriculum, the current, dominant culture of schooling emphasises the transmission of knowledge and skills over the development of competencies, though the dividing line between the two approaches is not clear cut. The trend in terms of current debate is towards a greater focus on the development of competencies, for example the development of problem-solving and process skills in science.

Compulsory subjects and their contribution to the development of key competencies

At primary level, literacy and numeracy skills are developed principally through the curriculum areas of Language and Mathematics. In certain curriculum areas the teaching of skills is embedded within the strands and strand units, e.g. Social, Personal and Health Education. At primary level, there has been debate on how ICT skills should be acquired by children, and whether these skills should be itemised in a hierarchy in guidelines for teachers.

The following subjects are compulsory at lower secondary level for the majority of schools – Irish, English, History and Geography, Mathematics, Science or a language or a business subject, and Civic, Social and Political Education (CSPE). In reality, the vast majority of pupils take Science and a modern language such as French or German and many also take business and technological subjects.

The NCCA report cited above suggests that in order to create greater space and possibilities for areas such as key skills, the curriculum at lower secondary level should become less prescribed over time with an emphasis placed on areas of experience over subject disciplines. These areas of experience could incorporate subjects and are listed as

- language and literature,
- mathematical studies,
- science and technology,
- social, political and environmental education,
- arts education,
- physical education,
- religious and moral education,
- guidance, counselling and pastoral care.

The subjects which would generally be viewed as contributing most directly to the development of generic, social and personal skills would include English, Languages, History, Civic, Social and Political Education(CSPE), Social, Personal and Health Education (SPHE), Business Studies and Religious Education but all subjects play an important role in this context.

Measurement, assessment and certification of key competencies

There are a number of ways in which Ireland ensures that the skills specified are acquired:

- they feature in the national examination at the end of compulsory schooling;
- the quality of their 'embedding' and integration in syllabus and curriculum documents acts, to a certain extent, as a determinant of their uptake;
- schools are subject to inspection;
- increasingly, schools are adopting the process of school development planning, a feature of which is review of the curriculum offered, including the quality of the provision of key skills.

Historically, summative assessment in primary schooling has tended to focus more on 'measuring knowledge than on assessing competencies'. However, the Primary School Curriculum encourages more formative approaches to the assessment of competencies within particular curriculum areas. (See reference to pilot initiative on assessment in the section on latest developments). There is no certification associated with primary schooling. Almost all primary schools use standardised tests to measure attainment in literacy and numeracy at least once a year. The Education Act (1998) enshrines the legal obligation on schools to assess periodically the educational attainment of children in schools and to report the results to parents.

National surveys in literacy and mathematics in primary schools are conducted regularly. The National Reading Survey is held every five years to measure literacy in fifth class pupils in primary schools. The National Assessment in Mathematics was last held in 1999 and measured numeracy attainment in fourth class pupils.

At lower secondary level, assessment approaches encompass both assessment for learning (or formative assessment) and assessment of learning (summative assessment). The latter has traditionally placed greater emphasis on measuring knowledge than on assessing performance in competencies in most subject. In addition, given the fact that summative assessment at this level takes the form of an externally examined national examination and certificate, this form of assessment influences classroom practice significantly. Teaching to a traditional type test can inhibit the emphasis placed on practicing certain skills and competencies in the classroom. In 1999, the NCCA published a review that proposed greater teacher assessment in the Junior Certificate Examination. This is currently under discussion with the education partners.

In general terms, the skills tested by the national examination, called the Junior Certificate, include:

- written communication and literacy skills,
- numeracy skills,
- manipulative skills (particularly in technology subjects),
- thinking skills (mainly lower-order thinking skills),
- problem-solving skills.

The skills tested are some of those covered by the curriculum, the selection determined by the nature of the examination assessment components. Thus, the state examinations taken by all pupils assess, at least partially, the skills required at the end of compulsory education. The use of the term 'partial' assessment is indicative of the fact that most subjects at this level are assessed through a written examination, therefore the range of skills that can be assessed is limited.

Standards for key competencies

There are separate proficiency levels specified nationally other than those indicated in the form of objectives within syllabus and curriculum documentation.

Support for pupils with special educational needs

At primary level, learning support and resource teaching is provided for children with special educational needs in all of these areas. The learning support teacher provides intensive and additional support in literacy (including oral language) and numeracy. Resource teachers provide help with social kills, e.g. communication, taking responsibility, and making choices. Various targeted initiatives are used to deliver extra support to children from disadvantaged areas.

When, at secondary level, additional learning support is provided for those with special educational needs or from a disadvantaged background, the emphasis at this level tends to be placed on the acquisition of basic skills of literacy, numeracy and communication.

Participation in international assessment studies of key competencies

At international level, Ireland has participated in the most recent OECD Programme for International Student Assessment (PISA 2000) and will continue to participate in future PISA programmes. Prior to this, Ireland participated in the Third International Mathematics and Science Study (TIMSS, 1994-1999) and the International Adult Literacy Survey (IALS 1997).

Latest developments in relation to key competencies

A pilot initiative on assessment is about to begin at primary level. At present, a series of learning outcomes, based on aggregated enabling objectives from the Primary School Curriculum, will be identified. These will amount to broad phrases, i.e. broader than the broad objectives in the curriculum subjects. Pupils' performance will be described using four proficiency levels, along the lines of 'restricted', 'basic', (working titles only) and so on. These learning outcomes will reflect the interrelationship in the Primary School Curriculum between knowledge, concepts, skills and attitudes.

At lower secondary level, the review and reform of the curriculum is a priority area of policy. To this effect, the NCCA, the advisory body to the Department of Education and Science on curriculum and assessment has proposed to focus on a number of areas to progress reform. These include:

- curriculum overload and overlap,

- curriculum planning,
- assessment for learning.

It is envisaged that progress in addressing each of these areas would contribute to improved provision for promotion of key skills and competencies. Relieving curriculum overload and overlap would create more space for learning associated with skills, improved curriculum planning would ensure that skills embedded in the curriculum are given appropriate attention while greater emphasis on assessment for learning will ensure that greater opportunities exist for valid assessment of the full range of skills prescribed in the curriculum.

Terms used to express the notion of key competence

The curricula for compulsory education (involving children aged between 6 and 15) were drawn up several years ago (in 1979 for lower secondary school, 1985 for primary school and in 1991, on an experimental basis, for the first two years of upper secondary school). These curricula set out the aims and content of education and specify the ***abilità fondamentali*** **(fundamental abilities)** which pupils should normally acquire. They do not, however, refer explicitly to the concept of *competenza* (competence) or *competenza chiave* (key competence).

The term competence did not find its way into educational terminology through the review of school curricula, but via the definition of new assessment procedures for the end of compulsory education in Law No. 9/99. This law and its implementing legislation extended the period of compulsory education from 8 to 10 years ([27]) and stated that pupils released from the obligation to attend school *(prosciolti dall'obbligo)* must have their knowledge, skills and competencies assessed. Furthermore, the subsequent Framework Law on the Reorganisation of Stages in Education (Law 30 of 10/2/2000), which is currently suspended, states that it is the responsibility of the education system to enable all citizens to acquire the ***conoscenze, capacità e competenze generali e di settore*** **(general and specific knowledge, skills and competencies)** required for their integration into life in society and the world of work. However, the reference to gradual development of 'the competence and skill of pupils to choose between general education and vocational training' as one of the aims of education is reiterated in Article 2, Section f of the Draft Law ([28]) which is currently being examined by parliament, even though the text of this law otherwise mainly uses the terms 'knowledge' and 'skills'. The report that opened the debate on the subject, however, was drafted in 1997 by a committee of academics entrusted by the government with the task of 'identifying the fundamental knowledge to be used as a basis for teaching young people in the coming decades'. This document referred to the ***conoscenze, competenze e sensibilità di base*** **(basic knowledge, competencies and awareness)** that should be imparted to children and young people who are to live in a society 'profoundly different from that of the past'.

However, a definition of the term 'competence' is not to be found in legislation but in other documents associated with the lively debate that has been continuing in Italy since the second half of the 1990s. Among these texts are the following:

- The document prepared in 2000/01 by a committee of 300 experts asked by the government to draw up proposals for reorganising the main stages of education and for revising their curricula accordingly. In this document, 'competence' is defined as 'mas-

([27]) Law 9/99, however, states that compulsory education should last nine years until Law 30/2000 on reorganisation of the main stages of education is fully enacted.

([28]) *Delega al governo per la definizione delle norme generali sull'istruzione e dei livelli essenziali delle prestazioni in materia di istruzione e formazione professionale* (Draft Law on General Norms and Standards for Education and Training).

tery of knowledge and skills in context' (*Annali della Pubblica Istruzione*, issues 3-4/2000, p. 225). In other words, 'Competence is knowing what to do (skill) in a given context on the basis of knowledge in order to achieve the set objective and produce new knowledge' (Annali, p. 156).

- In the programme to implement the above-mentioned Framework Law 30/2000, which was presented by the government to the two parliamentary chambers on 16/11/2000 and approved by them in December 2000, 'competence' is defined as 'the ability to master and use knowledge in a given context' (Annali, 3-4/2000, p. 22).

As could be inferred from the *Stati Generali dell'Istruzione,* (the forum on education convened by the Minister of Education in December 2001), **the prevailing belief seems to be that, at national level, it is preferable to define specific learning objectives rather than competencies** (*Annali*, special issue on the *Stati Generali*, December 2001, p. 246).

Selection of key competencies to be acquired by the end of compulsory education

Bearing in mind that the term *competenze chiave* (key competencies) does not feature in the curricula for compulsory education (primary, lower secondary and the first year of upper secondary education), these curricula outline seven fields of study:

- education in languages (including the mother tongue),
- education in history, civics and geography,
- mathematical and scientific education (including health and environmental education),
- technical education,
- artistic education,
- musical education,
- physical education.

Framework Law 30/2000 referred to above identifies linguistic knowledge (the mother tongue and foreign languages), mathematical knowledge and knowledge of information technology as 'essential basic competencies for responsible citizenship'.

The above-mentioned Draft Law on general educational standards also refrains from any explicit reference to key competencies. When referring to basic knowledge and skills, however, it stresses the importance of speaking and writing skills (including literacy in at least one EU official language) and computer literacy.

Acquisition of key competencies

In Italy, the current curricula were drawn up at national level. In accordance with the autonomy of schools in the areas of teaching, administration and research (Law 59/97 and

Presidential Decree 275/99) they may, when drafting their Plan for Educational Provision ([29]), reorganise teaching content to suit better their specific educational aims and the competencies of their pupils. At present, the curricula set out not only subject-specific but also transversal objectives (for example, education for a democratic society) to be attained through the study of several subjects.

The focus of these curricula is on knowledge and skills (the knowledge-based curriculum), an approach confirmed by the reform now being examined by Parliament. However, as the same Draft Law also makes reference to the progressive acquisition of competencies, any future legislation will have to take into account the development of both knowledge and competence. Consequently, the debate on the competence-based curriculum defined last year by the committee of experts (referred to above) is not yet over.

The pupil-centred approach has been widely accepted for many years in Italy and is officially recognised in law, as can be seen from the legislation on the curricula and the status of pupils (DPR no. 249/98). The approach was further reiterated in the Draft Law on general standards in education, which provides for individualised courses of study.

Compulsory subjects and their contribution to the development of key competencies

Teaching of the following subjects is mandatory during compulsory education: Italian language and at least one foreign language, history, geography, civic education, mathematics, physical and natural science, music and physical education. Law and economics have been made compulsory in the first year of upper secondary education on an experimental basis only.

Knowledge and skills are acquired by pupils through the study of specific subjects. However, teachers are requested to encourage interdisciplinary forms of work whenever possible. The subjects which help develop the general, social and personal skills of pupils are Italian and foreign languages, history, geography, civic education, music, and art and design.

The official documents do not refer explicitly to the skills/competencies of problem-solving or 'learning to learn', but curricula emphasise that schools must encourage the development of critical faculties and the creativity of pupils. Consequently, considerable attention has been devoted in the last ten years to training pupils in information and communication technology (ICT) from primary school onwards, a trend further reinforced by the Draft Law referred to above. The so-called new key competencies (problem-solving, learning-to-learn and entrepreneurship) have been at the centre of the recent debate on education and Italy is keenly aware of their importance, as the Draft Law makes clear.

([29]) *Piano dell'Offerta Formativa*, (POF): basic document about the cultural and planning identity of schools. The document identifies the curricular, extra-curricular, educational and organisational projects of each school with due regard for its autonomy.

Measurement, assessment and certification of key competencies

Pupils are assessed by their teachers during and at the end of each school year. Assessment at the end of primary and lower secondary school aims to establish the level of mastery of knowledge and skills, and not that of competencies. Compulsory education has been extended to nine years in 1999, but the lower secondary school leaving examination *(esame di licenza media)* is still taken after only eight years of schooling. It includes three written tests in Italian, mathematics and a foreign language, and an interdisciplinary interview on all subjects studied. The assessment carried out in the state examinations at the end of the fifth and eighth years of compulsory education is the responsibility of the class teachers. At the end of Year 5 they are assisted by two teachers from another class and at the end of Year 8 the examination board is chaired by a person from outside the school.

Following the lower school-leaving examination, pupils are still obliged to attend one year of upper secondary education. At the end of this year pupils are assessed by their teachers and either promoted to the second year *(promossi alla seconda classe)* or released from the obligation to attend school *(prosciolti dall'obbligo)*. Pupils who are no longer obliged to attend school are the only ones for whom assessment of competencies is explicitly provided for. They receive a certificate stating the competencies they have acquired during their time of schooling.

The new Draft Law states that, at the end of compulsory comprehensive education, the 'knowledge, abilities and competencies' of pupils are to be certified. There are also plans for changes to the procedures and timing of assessment which, in future, will be carried out not only by teachers but also by the *Istituto Nazionale per la Valutazione del Sistema Scolastico* (National Institute for Assessment of the Education System).

No indicators or benchmarks are used to monitor the acquisition of competencies. This too is currently under review.

Standards for key competencies

No national standards are currently in operation. The Draft Law, however, attaches considerable importance to the definition of standards for knowledge and skills *(livelli essenziali delle prestazioni)*. The question of whether standards will be set in relation to educational establishments (input-related) or the pupils (output-related), however, remains open. Article 3 provides for evaluation of the education system and assessment of the achievements of pupils (i.e. their knowledge and skills). The suggested new evaluation system is currently undergoing testing in a pilot project carried out by the above-mentioned National Institute for Assessment of the Education System.

Support for pupils with special educational needs

For many years, pupils with special educational needs have been integrated into mainstream classes with help from support teachers. There are no separate institutions for special education. In schools in southern Italy, the pupils concerned also benefit from additional support initiatives financed by the European Social Fund.

Participation in international assessment studies of key competencies

Italy has already taken part in the following international surveys conducted by:

IEA:	FISS (1970-71), SISS (1983-84), RLS (1991), TIMSS (1994-99), CIVED (1995-97, 1999), SITES (1999-2000), PIRLS (1999-2003), TIMSS (2000/04), COMPED.
OECD:	PISA (2000), PISA (2003), PISA (2006).
OECD & Statistics Canada:	IALS (1997), ALL (2001-04).

It plans to continue this participation in the future.

Latest developments in relation to key competencies

The debate on competencies was very lively at the end of the 1990s and involved universities, professional representatives and associations from different economic sectors, and teachers (the debate is summarised in *Annali della Pubblica Istruzione*, Dossier Nos 1 and 2/2000).

The Draft Law currently going through Parliament provides for a series of changes. While the acquisition of knowledge and skills is still at the heart of education, there is also reference to the development of competencies, although admittedly not key competencies. In future, this could result in a review of curricula, which are currently still knowledge-based. As far as assessment is concerned, the Draft Law provides for the introduction of centrally determined standards for pupil achievements, which would also have implications for the frequency of assessments and the way in which they were carried out.

Terms used to express the notion of key competence

The term 'competence' has been used in its customary sense but, until now, its use has been very limited. The law of 10 August 1912 on the provision of primary education, defines ***compétences de base*** **(basic competencies)** in terms of their ultimate purpose: 'primary education aims to ensure that children acquire the knowledge and basic skills enabling them to engage in subsequent learning and study, and to develop their abilities and nurture in them a sense of peace, dignity, tolerance, liberty, equality and shared social responsibility that is the basis for our democratic society.'

It is of interest that the aims of primary education are expressed from the standpoint of the school ('schools should… '). New proposals for study at school will certainly be structured around the basic competencies that learners should acquire. In this context, the most recent circular in the spring of 2002 announced a general revision of the curriculum, '(…) which under no circumstances should involve adding new subjects or areas of study; by contrast, it will be concerned with ensuring that courses focus on what is most essential, providing for the deepening of (…)'.

At present, in Luxembourg, the aims **of public-sector schools are focused on areas of study** (in the legislation, curricula and courses, timetables, school reports and teacher training) with the exception of the directives on pre-school education (at which attendance is compulsory). However, it is the above-mentioned circular (spring 2000) with its directives from the Ministry of Education, Vocational Training and Sport for teaching staff and the municipal authorities that has marked the arrival in schools of the concept of competencies and basic skills. In general, this concept will have a considerable bearing on the following:

- the reform of the general law on education,
- the reform of the curriculum, courses and timetables,
- assessment (and the monitoring of learning) and the structure of school reports,
- teaching practice,
- provision for children with learning difficulties,
- the introduction of national examinations.

Work in all these areas began in 1999 and will be completed in 2002/03.

Selection of key competencies to be acquired by the end of compulsory education

The 2002 spring circular states in its headings 'key aspects: what should be taught?': 'the subject matter of pre-school and primary education should be based on four areas:

- **The area of basic technical abilities and skills:** pre-school education seeks in particular to develop emotional self-expression and the use of language in children, along with

their bodily and muscular coordination and reflexes. In primary school, children mainly learn reading, writing and arithmetic.

- **The area of knowledge:** schools should ensure that children develop extensive general knowledge.
- **The area of more advanced cognitive skills:** these skills are transversal and consist in the use and application of knowledge and basic competencies. In all areas of study, pupils learn as they should to analyse, draw reasoned conclusions, undertake comparisons and establish associations.
- **The area of values, social behaviour and attitudes to work.** It is not the task of schools to replace education in the family. However, it complements it and consolidates with the means available to it concern for accuracy, respect and tolerance. It nurtures the will to learn and stimulates intellectual curiosity'.

The 1997 'Framework Plan for Pre-school Education in the Grand-Duchy of Luxembourg' notes that 'competencies (and to some extent knowledge) are not taught but gradually consolidated'. They develop broadly together in the contexts that arise from the following six areas: bodily/muscular activity, musical activity, artistic activity, logical and mathematical activity, language activities and initial awareness of the world of science.

According to the 'The Curriculum for Primary Schools in the Grand-Duchy of Luxembourg' (Ministerial Decree of 1 September 1989), 'the aim of primary schools, which are for everyone, is to develop skills, attitudes and appropriate behaviour in children, ensure that they acquire competencies and impart basic knowledge to them'. As a result, schools have to assume responsibility for teaching, educating and socialising them. Aspects of these tasks frequently interact and complement each other. The responsibility for teaching assumed by schools is concerned primarily with cognitive, aesthetic and practical matters; the task of educating and socialising children should ensure their well-balanced development in cognitive, emotional, physical and social terms.

Acquisition of key competencies

The curricula, teaching methods and aims of education have to be based on four areas …enumerated in the circular letter of spring 2002.

In Luxembourg, pre-school educational activity is focused exclusively on children. Dynamic and broadly based, teaching emphasises the importance of play, and is adjusted to the individual differences of children. It is inspired above all by a comprehensive approach which puts a premium on activity and experience, play, and a distinction between educational activity and intercultural education.

The primary school curriculum (1989) states: 'the school environment should be a happy and welcoming one, whose friendliness and warmth are conducive to study, work and play and in which children are granted the necessary space, time, support and patience needed for them

to learn in a lively manner and achieve their full potential. Primary schools should assist all children, stimulate the most able, encourage those who are less gifted and protect and support the weakest. They should ensure that every child progresses satisfactorily in his or her own way, through teaching geared to individual needs in terms of its content and methods, the level of learning objectives, and concern for the rate at which pupils grow and mature and for their adaptability and attentiveness, as well as for differences in the time it takes them to acquire knowledge (…)'.

Teaching recommendations vary slightly from one area of study to the next. Where pupils are introduced to subjects for the first time, greater attention is devoted to practical activity and cooperative learning. It should also be noted that teaching in Luxembourg reflects changes in approach that have occurred in classroom teaching in recent decades. Many classes operate in accordance with the 'open school' principle conducive to partnership, in which each child has a personalised weekly work programme.

Compulsory subjects and their contribution to the development of key competencies

The primary school curriculum is structured in accordance with the subject areas to be taught. Aims, subjects to be covered and abilities that should be acquired are specified for each area of study. All areas are associated with the development of generic competence. Reading, for example, constitutes a transversal competence, given that it is not restricted to language learning but also dealt with in other areas such as geography and history (basic reading of documents).

FIGURE 11: COMPULSORY SUBJECTS AND THE COMPETENCIES THEY ARE MEANT TO FOSTER, REFERENCE YEAR 2002

Compulsory schooling Order of teaching	Mandatory subjects	Competencies required
4-6 years of age: Pre-school education	Bodily, musical, artistic, logical and mathematical activity, and initial learning about the world of science.	Stipulated in the Framework Plan.
6-12 years of age: Primary education	German, French, Letzeburgesch, mathematics, early learning about the world of science, natural sciences, geography, history, music, artistic education and handicrafts, physical education and sports, religious and moral instruction, moral and social education.	Stipulated in the curriculum.
12-15 years of age: Secondary education	The list of subjects depends on the branch of secondary education (general or technical secondary education) and the classes concerned (7th, 8th or 9th).	Stipulated in the curriculum.

Source: Eurydice, Luxembourg National Unit.

As far as information and communication technology (ICT) is concerned pupils are introduced to computers in all areas of the curriculum – new information and communication technology is definitely not regarded as a single school subject area. In language teaching in secondary education, pupils may even take the *PC-Führerschäin* (the test for a 'computer driving licence').

In pre-school and primary education, municipalities have made a special effort to computerise schools. In secondary education, the *cartable électronique* (electronic kit with a portable computer for each pupil) constitutes an ambitious undertaking along the same lines.

Measurement, assessment and certification of key competencies

The curriculum distinguishes between three types of assessment which differ essentially in terms of their form and purpose:

- formative assessment during the learning process which is concerned with small learning assignments and used very regularly;
- summative assessment in periodic tests or exams concerned with larger modules or areas of learning;
- assessment of the likely future progress of pupils.

In general, assessment is carried out by the teacher or a group of teachers. Compulsory national examinations are held in the sixth year. Optional examinations are planned for the second, fourth and ninth years.

The compulsory sixth-year standard examinations cover mathematics, reading, oral comprehension, grammar, vocabulary and free written production in both French and German.

Standards for key competencies

No national standards have been established, but a national research project is planned in the area of qualitative indicators.

Support for pupils with special educational needs

Following the Law of 28 June 1994 on so-called 'educational integration', pupils in difficulty may fulfil their obligation to attend school:

- in classes in specialised centres and institutes for special education,
- in classes in mainstream education,
- part-time in classes for general or technical secondary education,
- in a specialised institution abroad.

Integration within a mainstream class may be supported by means of classroom assistance, out-of-school assistance, team teaching or the part-time enrolment of children in so-called 'inte-

gration' classes. Teaching in these classes is based on whole areas of study for pupils who have excessive difficulty in following one or more of these areas in normal classroom work.

In special education, children are catered for by multidiscplinary teams. Other bodies include generalist regional centres, the *Institut pour infirmes moteurs cérébraux* (for those suffering from cerebral palsy), the *Institut pour enfants autistiques et psychotiques* (for autistic and psychotic children), the *Centre de logopédie* (logepedics) and two centres for educational integration. In special education, the curriculum identifies ten areas of study that approximate to the concept of 'life skills', while the conventional school areas of reading and writing along with other skills form a set of competencies. On the basis of this document, teaching and other educational staff draw up a programme for the education of each child which becomes in effect his or her own personal curriculum.

Participation in international assessment studies of key competencies

Luxembourg has participated in PISA 2000 and is planning to continue its participation in the PISA follow-up surveys.

The Netherlands

The following information concerns ***basisvorming* (basic secondary education)** only. Basic secondary education is the common core of the different types of secondary school ([30]) and comprises the first two or three years of secondary education. It provides a general education for nearly all pupils aged 12 to 15.

Terms used to express the notion of key competence

In the Netherlands, key competencies are known as *kerncompetenties* (core competencies). This term, however, does not feature in the national curriculum which only refers to educational targets. These fall into two categories, the general or subject-independent targets and the subject-specific ones. ***Algemene onderwijsdoelen* (general educational targets)** are set by the Ministry of Education, Culture and Science, which reviews them every five years to reflect changing social demands. For the period 1998-2003, the ministry has set six general educational targets which take precedence over subject-specific goals. Although general educational targets correspond in essence to the survey's definition of key competencies, the term itself has not found its way into Dutch curricular terminology. The suggestion by the Dutch Education Council that the next generation of educational targets (to take effect from 2004) should be based on core competencies was rejected by the educational establishment. It was felt that the emphasis on competencies would result in too narrow a definition of attainment targets which could erode the autonomy of schools.

Selection of key competencies to be acquired by the end of compulsory education

For the period 1998-2003 the following six **general attainment targets** have been made mandatory ([31]):

1. Cross-disciplinary themes

Within the context of broad and balanced consideration of people and society, pupils should obtain a certain level of insight into their position within their immediate personal environment, as well as the wider social environment. Explicit attention should be given to:

- recognising and dealing with one's own standards and values and those of other people;
- recognising and dealing with similarities and differences between the sexes;
- the relationship between mankind and nature and the concept of sustainable development;
- active citizenship in a democratic and multicultural society and in the international community;
- acting with due regard for personal and general safety within one's own environment, as well as for road safety;

([30]) Senior general secondary education, HAVO; pre-university education, VWO; and pre-vocational secondary education, VMBO.

([31]) *Attainment Targets 1998-2003, Basic secondary education in the Netherlands,* Ministerie van Onderwijs, Cultuur en Wetenschappen, 1998.

- the social significance of technological development, including modern information and communication technology (ICT);
- the social significance of paid and unpaid work;
- the achievements and possibilities of art and culture, including the media.

2. Learning to do

In situations as close as possible to real life, pupils should learn how to develop further certain skills acquired at school, making use of ICT where appropriate. The skills in question are:

- understanding written and spoken Dutch and English;
- speaking and writing correct Dutch;
- finding, selecting, gathering and organising information from various sources;
- using arithmetical skills, such as performing mental arithmetic, applying arithmetical rules, measuring and estimating;
- complying with environmental, hygienic, health and ergonomic standards;
- using materials, tools and equipment safely and efficiently;
- using computers.

3. Learning to learn

Pupils should learn to acquire knowledge and skills, making use of ICT where appropriate. To this end, they should learn (amongst other things) certain strategies for improving the learning process. The strategies in question are:

- assessing information on the grounds of reliability, representativeness and usefulness, as well as the processing and use of information;
- using strategies for the acquisition of additional knowledge and skills, including memorisation, note-taking, schematisation and the identification of associations with existing knowledge;
- using strategies for the comprehension of written and spoken information;
- making choices on a considered basis;
- investigating a simple technical, scientific or social question systematically;
- expressing personal experiences and carrying out instructions from other people, using words, sounds, images and movements;
- developing a personal opinion by means of reasoned argument.

4. Learning to communicate

Pupils should learn how to develop further certain social and communicative skills, on an interactive basis where appropriate. The skills in question are:

- respecting elementary social conventions;
- conversing and working as part of a team;
- using appropriate discussion techniques;
- identifying and dealing with differences of opinion;
- recognising and dealing with cultural and gender-related similarities and differences;
- dealing with formal and informal arrangements, rules and procedures;
- presenting oneself and one's work.

5. Learning to reflect upon the learning process

Pupils should learn to be analytical about and to control the learning process, by reflecting upon their own performance. The topics to be addressed are:

- planning work;
- monitoring the learning process;
- making a simple product and process evaluation and drawing conclusions for future application.

6. Learning to reflect upon the future

Pupils should learn to be analytical about their options for the future/prospects and interests, by reflecting upon their own performance. Explicit attention should be given to:

- listing personal capabilities and interests;
- looking into further study options;
- the role and significance of the knowledge, insight and skills acquired at school, and in employment and other forms of occupations;
- ways of using one's leisure time.

In addition to general educational targets, the curriculum also sets **attainment targets for the 15 compulsory subjects.** The paper *Attainment targets, Basic Secondary Education 1998-2003,* includes instructions about how each subject is supposed to contribute to the attainment of general educational targets. The introduction to each subject lists components of the general target which must be addressed, as well as others which may be addressed when teaching the subject in question.

Acquisition of key competencies

Following the introduction of basic secondary education in its current form in 1993, the compulsory curriculum underwent a far-reaching review. The main emphasis was on the development of skills rather than on the acquisition of knowledge. This change in approach is reflected in the wording of the general attainment targets. In the years that followed, concern was voiced by some that skills were now being overemphasised to the detriment of knowledge. As a result, the original shift from a knowledge-based to a skills-based curriculum is currently being reversed and a compromise sought between the two approaches.

The ministry recognises ([32]) that successful integration of the general educational targets into everyday teaching practice, requires a gradual shift towards:

- skills-focused education that aims at a balanced development of knowledge, understanding and skills;
- education that focuses on a more active role for pupils, i.e. a move from teacher-directed towards pupil-directed education;
- diversified educational provision that recognises and takes account of the differences between pupils;
- Consistency of educational provision with teachers individually and collectively discovering and defining the contribution their subjects can make to their joint efforts on behalf of their pupils.

In basic secondary education, there are no recommendations regarding teaching methods. Teachers are autonomous in this respect and responsible for choosing the appropriate approach.

Compulsory subjects and their contribution to the development of key competencies

The following subjects are mandatory for all pupils in basic secondary education: Dutch, English, a second modern language (French or German), history and politics, geography, economics, mathematics, physics and chemistry, biology, life skills, ICT, technology, physical education, and two subjects from among education in the visual arts, music, drama and dance.

The booklet *Attainment targets: Basic secondary education 1998 – 2003,* published by the Ministry, contains guidelines on how to meet both the general and subject-specific attainment targets. It lists, for each subject separately, all those general targets that must be addressed through the teaching of the subject in question. However, schools are free to decide whether to pursue other general goals with the help of the same subject and, if so, which goals. This introduction is followed by a list of subject-specific attainment targets. Where appropriate, special attention is drawn to the fact that certain targets are closely associated with targets in other disciplines.

([32]) *Attainment Targets 1998-2003, Basic secondary education in the Netherlands,* Ministerie van Onderwijs, Cultuur en Wetenschappen, 1998.

The pursuit of all general educational targets is integrated into the teaching of one or more specific subjects, except in the case of ICT which, in addition to being a general target, is also listed as a separate subject. Key competencies relating to health and safety are addressed in the subject 'health care', and might in future be addressed within the learning area of nature.

Measurement, assessment and certification of key competencies

Testing as such is mandatory, but there are no standardised, national tests in basic secondary education. Pupil achievements in relation to attainment targets are assessed in school-based tests which address both knowledge and competence. Assessment does not lead to a certificate but determines whether students are promoted to the next (higher) class. The Inspectorate monitors the testing policy of schools.

Standards for key competencies

As explained above, the national curriculum defines six general and 15 subject-specific attainment targets. Schools should consider these targets as the minimum level of achievement to be expected from pupils by the end of basic secondary education. Each school is free to set specific levels of achievement for its pupils. The assumption is that each teacher will 'set these levels as high as possible' depending on the potential and interests of the pupils concerned.

Support for pupils with special educational needs

Pupils with special educational needs (less than 5 % of all pupils) follow the same curriculum but at a different pace. They are either given more time to reach the general attainment targets, or follow a 'made-to-measure' curriculum which releases them from the obligation of having to meet all such targets. Additional support is available for pupils with special educational needs so that they can obtain a qualification.

Participation in international assessment studies of key competencies

The Netherlands has so far taken part in PISA and is collaborating with the OECD and IEA on various other projects.

Latest developments in relation to key competencies

The review of basic secondary education in 2004 will split the curriculum into two parts: a mandatory core for all pupils and a flexible part with scope for offering different programmes to different pupils. The core curriculum in basic secondary education can be seen as a set of knowledge, skills and attitudes essential for all individuals to lead purposeful lives as active members of society, or as it is stated in the official documents, as 'a broad base for personal, societal, and professional functioning for all pupils'. This description is very similar to the one for key competencies. The core curriculum will consist of fewer compulsory subjects than the current 15, some of which might be grouped into learning areas. All core curriculum attainment targets will be reassessed so as to be attainable in only two-thirds of the current period of two or three years. The first learning area to be created is nature with separate attainment targets for physics, chemistry, biology, technology and health care. In all probability, there will be at least two different science strands, one 'technological', the other 'medical'. The first

strand would set targets for physics, chemistry and technology, whereas the medical strand would comprise targets for biology and health care. At a later stage, it will be decided whether it is possible and beneficial to include the learning areas 'man and society' and 'arts'. A special Renewal Basic Secondary Education Taskforce is in charge of developing a new core curriculum and will also advise on the grouping of some of the learning targets into learning areas (at least in the case of the one(s) for nature). The taskforce will take into account experience acquired at school level by actively involving schools and teachers. It will also take account of the opinion of an advisory group with representatives from different walks of life.

There are also several projects for improved integration of theoretical and practical components into the curriculum, with a view to offering a more 'hands-on' learning experience and a more consistent programme overall.

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Terms used to express the notion of key competence

The debate on general education employs a multitude of terms to express the notion of key competence. ***Grundfertigkeiten* (basic skills)** and ***Grundkompetenzen* (basic competencies)** are the terms used when trying to convey the notion in its broadest sense. Reading, writing, calculating and general knowledge are often referred to as ***Kulturtechniken* (culture techniques)**. The terms ***Schlüsselqualifikationen* (key qualifications)**, ***Schlüsselkompetenzen* (key competencies)** and ***dynamische Fertigkeiten* (dynamic skills)** are used when talking about subject-independent, transversal competencies.

Selection of key competencies to be acquired by the end of compulsory education

Curricula for the *Hauptschule* (general lower secondary schools) and *allgemeinbildende höhere Schule* (academic secondary schools) are essentially the same. Both consider the development of ***Sachkompetenz* (subject-specific competence)** i.e. the transmission of knowledge, to be the school's main task. Within the context of lifelong learning, successful transmission of knowledge is only possible if pupils are empowered and encouraged to learn actively and independently and to critically examine the available information. All subject-specific competence must therefore be supported and complemented by ***Sozialkompetenz* (social competence)** and ***Selbstkompetenz* (personal competence).** Promotion of these two dynamic skills should prepare pupils for situations that cannot be addressed through the simple recall of information. Coping with such situations requires initiative, acceptance of responsibility, and cooperation with others. Curricula for the *Polytechnische* Schule (pre-vocational school) also stipulate the development of key qualifications in certain vocational subjects.

Apart from requiring the development of *Sach-*, *Sozial-* and *Selbstkompetenz*, curricula do not contain any reference to key competencies. Closer study of the curricula and other educational documents, however, reveals a broad consensus on possible groups of key competencies:

- reading, writing, calculating (culture techniques);
- foreign languages;
- basic understanding of mathematical concepts;
- information and communication technology;
- subject-based competence (general knowledge in humanities, and the natural and social sciences acquired through independent and active study involving critical examination);
- dynamic skills:
  - o personal competence (development of one's talents and possibilities; awareness of one's strengths and weaknesses; self-reflection);
  - o social competence (accepting responsibility; cooperation; initiative, creativity).

The curricula for *Hauptschule* and *allgemeinbildende höhere Schule* (lower secondary schools) provide a breakdown of *Sachkompetenz* into five separate areas of study: language and communication, the individual and society, nature and technology, creativity and design, health and physical exercise. As a result of educational targets stipulated at EU level, discussion has recently focused on the development of the so-called new basic competencies. These comprise information and communication technology (ICT), foreign languages, entrepreneurship, social competencies and technological culture.

Acquisition of key competencies

General educational aims are formulated by law and, as such, correspond to a social and political consensus. These goals contain many references to the basic skills listed above and must be regarded as a reference point in the current debate on the changing role of education. At the same time, there is mounting concern over the difficulties encountered when implementing them. Their rather vague formulation stands in stark contrast to the very detailed definition of educational content within different subject curricula. All teaching materials and, in particular, textbooks are devised in line with the curriculum for each prescribed subject. The influence of these curricula on educational practice therefore tends to be greater than that of the foregoing general aims.

Compulsory subjects and their contribution to the development of key competencies

Schools enjoy considerable autonomy as regards the amount of school time to be allocated to compulsory subjects. This is particularly true for secondary schools. As a general rule, however, teaching of the following subjects is mandatory throughout compulsory education: religion, German, mathematics, music, artistic education and physical education. During primary education, geography, history and biology are considered a single subject area and only in secondary education are they taught as three separate subjects. Physics and chemistry are introduced as compulsory subjects at the beginning of lower secondary. Teaching of foreign languages currently becomes compulsory after the second year of primary education, but is soon to be made compulsory from the start of compulsory education itself.

Curricula are divided into two parts. The general part sets out the aims of education, specifying the skills and competencies that should be developed, and providing guidelines for teachers. The specialised section contains the subject-specific content for each year. The above-mentioned compulsory subjects should contribute to the development of the following skills and competencies:

German: use of language as a means for exchanging experiences and ideas, forming relationships and safeguarding interests, receiving, processing and transmitting factual information, discussing topical subjects, understanding forms of expression in certain texts and the media and how they achieve their effects, and the creative use of language.

Mathematics: relating mathematical action and concepts to many different situations; making use of mathematical knowledge and skills acquired by pupils in their daily lives, and develop-

ing them further; constructing mathematical models and appreciating their limits; responsible handling of results obtained with the help of mathematical processes; gaining insight into relationships and constructing concepts with the help of mathematical action and knowledge; productive mental exercises, reasoning and accuracy, critical thinking, representation and interpretation as basic mathematical activities; ability to design learning processes independently; planning and testing possible solutions relating to tasks and problems, through use of the appropriate techniques, learning strategies and heuristic methods; using different technological tools (e.g. computers).

Music: aesthetic perception; imagination, expression and fantasy; ability to concentrate; readiness to learn, self-discipline, team spirit, communication and tolerance; experience and knowledge regarding the psychological, physical, social, manipulative and therapeutic effects of music and ability to put them to use; ability to critically examine and appreciate musical activities and artistic achievements.

Artistic education: basic knowledge in visual communication and design; access to fine art, visual media, environmental design and general aesthetics; ability to perceive, communicate and experience; imagination, fantasy, individual expression and design; basic technical skills; openness; the will to experiment; flexibility and perseverance; visual perception, recognition and activities; creative and responsible use of the new media; creativity, readiness and willingness to act; pleasure in one's own work; cultural awareness and tolerance.

Physical education (movement and sport): ability to develop physical fitness and the necessary coordination skills; ability to perform basic and varied physical exercise; discerning preferences for certain forms of exercise and their incorporation into the personal lifestyle; experiencing movement and body in varied situations and premises; ability to exercise in cooperation and competition with others and to manage conflicts; a critical and constructive approach to certain games and trends in sport and to the norms and values associated with sport.

In addition to these aims, curricula also recommend certain approaches for teaching the subject in question. Among them are the use of a variety of teaching methods (such as individual and group activities, working in pairs, open learning); provision of support for independent work and the ability of pupils to assume responsibility; relating learning to real life (e.g. meeting experts, events, giving lessons outside the school); developing problem-solving competence; introducing learning strategies that promote lifelong and independent learning, critical thinking and creativity.

Measurement, assessment and certification of key competencies

The Austrian education system has not been designed for objective measurement of educational achievement. It is characterised by certain reservations about testing but very high confidence in teachers. The approach to evaluation is input-oriented with a high incidence of regulations in relation to teaching aims and content. Prescriptions concerning the standard of educational output and its assessment are of lesser importance.

When assessing pupils' achievements in certain subjects, teachers also take into account their competence in applying the relevant methods *(Methodenkompetenz)* and in cooperating with others *(Teamkompetenz)*.

Standards for key competencies

In line with the input-oriented approach to evaluation, the education system does not prescribe minimum standards in terms of educational output from compulsory education. With no stipulated minimum level of attainment, teachers aim for levels that correspond to the abilities and talents of their pupils.

The relatively low academic demands of apprenticeship training (which usually follows general secondary education) have created little incentive to raise the standard of achievement in basic competencies in general secondary education. Academic general education, on the other hand, has always been perceived as a preparation for higher education. The debate on basic competencies and their associated standards is therefore strongly conditioned by the contrasting expectations of general and academic general education. A steering group has now been given responsibility for developing minimum standards for certain basic competencies which would apply across the whole of lower secondary education (see also the section on 'latest developments' below).

Support for pupils with special educational needs

Special educational needs are acknowledged if a child is physically or mentally handicapped and, as a result, lacks the ability to follow classes without special assistance. It is important to note that parents may choose between special support provided in mainstream education or at a *Förderschule* (special support school).

Depending on the handicaps of individual pupils, additional subjects, as well as therapeutic and functional exercises, have to be provided. Separate curricula exist for different types of special school, including those for blind and deaf children. However, these curricula must contain a clause enabling pupils to be taught in accordance with mainstream school curricula in those subjects in which they are likely to achieve the required level of educational attainment without being overtaxed. Children whose mother tongue is not German can benefit from additional support for learning German and improving proficiency in their own native language.

The provisions regarding certification in general compulsory schools also apply to special schools. However, certificates include a special note if children with special educational needs were taught in accordance with different curricula, or in different curricular grades.

The current discussion on key competencies and related standards also extends to the teaching of children with special educational needs.

Participation in international assessment studies of key competencies

Austrian participation in international assessment studies has so far been very limited (TIMSS, PISA).

Latest developments in relation to key competencies

The latest government programme relates the maintenance and improvement of high educational quality to the establishment of performance standards. In the autumn of 2000, a steering group made up of representatives from the educational administrations in the *Bundesländer*, the Centre for School development and the academic community, and officials of the education ministry was set up by the government. Its mandate is to establish national performance standards and related implementation strategies. Although standards are closely linked to curricular content they do not state what has to be tested in exams but give a verbal account of the competencies that must be achieved at a particular point in time. This formulation gives teachers the necessary freedom to interpret and implement national standards. Attention focuses on two particular points in pupils' careers, namely the end of primary education and lower secondary education respectively. For these two points of intersection, standards are to be established for the following four key competencies:

- reading competence, and in particular the understanding of written texts;
- basic mathematical understanding;
- basic understanding of natural science (at the end of secondary education);
- foreign language competence.

National achievement standards are intended to ensure that assessment of educational quality is subject to greater regulation and more uniform. They are meant to foster the objective assessment and comparability and facilitate pupil mobility.

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Terms used to express the notion of key competence

The term ***competência*** **(competence)** is understood to mean knowledge in action or in use. It refers to the integrated development of knowledge, skills and attitudes for all stages of basic education ([33]). Thus, competence does not involve adding a set of skills and attitudes to a certain body of knowledge. Instead, it relates to the promotion or integrated development of skills and attitudes which are conducive to the use of this knowledge in different situations with which the pupil may or may not be familiar.

Competências essenciais **(essential competencies)** constitute the body of general and subject-specific knowledge which is considered indispensable for all citizens in today's society. In particular, it is essential to identify the knowledge which enables pupils to develop their understanding of the nature of each subject and its processes, as well as a positive attitude towards intellectual activity and the practical work it entails.

A distinction is made between ***competências essenciais gerais*** **(general essential competencies)**, i.e. those that every pupil should possess at the end of basic education, and ***competências essenciais específias*** **(specific essential competencies)**, i.e. those that refer to a specific subject or subject area.

Selection of key competencies to be acquired by the end of compulsory education

The essential competencies for basic education are the outcome of a wide-ranging debate that occurred between 1996 and 2001. The process of defining these essential competencies involved schools, higher education institutions, specialists and researchers, educational associations and movements and civil society in general. This work yielded the *Projecto de Gestão Flexível do Currículo* (project for flexible curricular management) in which many schools took part between 1997 and 2002. Based on the experience of curricular management in these schools, the definitions of general and specific competencies were validated through their school-based implementation. Following this consideration of essential competencies, the curricular reorganisation of basic education is being implemented at national level from the 2001/02 school year (under the terms of Decree-Law 6/2001). Initially, the new curriculum is being applied to the first and second stages of basic education. From 2002/03 its application is being gradually extended to the third stage, a year at a time, until in 2004/05 the whole of basic education will be governed by the competence-based curriculum.

At the end of basic education, it is expected that pupils should have acquired the following general essential competencies, involving ability to do the following:

- mobilise cultural, scientific and technological knowledge to understand reality and deal with everyday situations and problems;

([33]) Basic education *(ensino básico)* comprises nine years of compulsory education consisting of three consecutive stages of four, two and three years respectively.

- use languages from the different fields of cultural, scientific and technological knowledge to express themselves effectively;
- use the Portuguese language to communicate proficiently and structure their thoughts;
- use foreign languages to communicate proficiently in everyday situations and assimilate information;
- adopt personalised working and learning methodologies geared to achieving set objectives;
- investigate, select and organise information in order to transform it into knowledge that can be mobilised;
- adopt appropriate problem-solving and decision-making strategies;
- carry out activities independently, responsibly and creatively;
- cooperate with others in common tasks and projects;
- foster a harmonious relationship between the body and space through a personal and interpersonal approach that enhances health and the quality of life.

Development of these general competencies requires interplay between all curricular fields. Furthermore, the way in which these competencies should be acquired must be clarified, and implementation must be transversal. The various parts of the curriculum and the teachers concerned have to make it clear how this transversal aspect should be integrated into each subject-specific field of knowledge and applied to each learning situation. For each general competence, certain teaching practices considered essential for its proper development in the different areas of the curriculum for basic education also have to be established.

Acquisition of key competencies

As explained above, essential competencies fall into two categories: general and subject-specific ones. For each of the ten general competencies, the National Curriculum specifies its implementation in a transversal and subject-specific manner.

The National Curriculum is focused on the development of competencies. This commitment to competencies implies the acquisition of knowledge, skills and attitudes based on knowledge in action or in use. At present, we are seeing a move away from a curriculum based on the acquisition of knowledge towards one based on the development of competencies. The acquisition of general and specific competencies is compulsory, although schools are autonomous when it comes to managing the curriculum and can therefore set their own priorities and strategies for the development of competencies in line with the specific needs of their pupils.

The National Curriculum encourages independent and creative attitudes on the part of pupils, along with the development of information and communication technology (ICT). These competencies are of a transversal nature, which means they are developed by all subjects or subject areas. Successful transversal integration of ICT within the curriculum for basic education

presupposes the availability of appropriate teaching content for the different stages of this educational level. The Ministry of Education has already published a study carried out by the *Nónio-Século* XXI Programme (*Estratégias para a acção – As TIC na educação*, or Strategies for Action – ICT in Education) which offers teachers and schools a number of guidelines for developing this area.

The curriculum is geared to the use of teaching methods that encourage active learning (learning by doing and experimental learning), but this principle accommodates a variety of approaches. For all subjects and subject areas, the curriculum prescribes the development of competencies and the types of educational experience to be imparted to pupils throughout basic education.

Compulsory subjects and their contribution to the development of key competencies

Teaching of the following subjects is mandatory during basic education:

First stage – the Portuguese language, mathematics, social and environmental studies, expression (artistic, physical/psycho-motor), project work, (guided) study skills and civics.

Second stage – the Portuguese language, a foreign language, the history and geography of Portugal, mathematics, natural science, artistic and technological education, musical education, physical education, project work, (guided) study skills and civics.

Third stage – the Portuguese language, two foreign languages, history, geography, mathematics, natural science, physics/chemistry, artistic education and a second artistic option from music, dance, theatre workshop, or another option offered by the school and authorised by the *Departamento da Educação Básica* (Basic Education Department, or DEB), technological education, physical education, project work, guided study and civic education.

Subject-specific competencies are developed through the teaching of individual disciplines. General competencies, which are of a transversal nature, are developed across all subjects or subject areas and through educational experiences devised in or by the school. The current shift towards a competence-based curriculum will, in the long run, require a review of the list of compulsory subjects.

Measurement, assessment and certification of key competencies

The purpose of assessment, in legal terms, is to foster the development of competencies. However, it is still proving difficult to break away from the logic of knowledge assessment. Formative assessment is continuous and should respect each pupil's individual rhythms of learning. Summative assessment usually takes place at the end of each term and stage and is expressed in marks ranging from one to five. A certificate is issued at the end of each stage. At the end of basic education (ninth year), overall tests are organised. These tests are set by the schools in all subjects and are taken into account in the final assessment of pupils, along

with their continuous assessment. Pupils who obtain a pass are awarded the *diploma do ensino bàsico* (basic education certificate) indicating the course taken and the final grade obtained.

Responsibility for assessment in the first stage lies with the class teacher and the school council, and in the second and third stages with the class council. In addition, there are national examinations at the end of the sixth year (at the end of the second stage) and ninth year (the final year of compulsory education) for pupils who, for example, attend schools which have not been granted educational equivalence, or for pupils who have followed a programme of home-based education. Pupils may apply to take these examinations (which include all subjects in the curriculum). The authority responsible for setting these examinations is an office of the Ministry of Education which specialises in assessment, the *Gabinete de Avaliação Educacional* (GAVE).

In the year 2000, standardised national tests in Portuguese and mathematics were introduced throughout the country for all pupils. This assessment is carried out at the end of each of the three stages of basic education. In 2000, these tests were organised at the end of the first stage (fourth year). In 2001, the test was taken by pupils in the fourth and sixth years (the final year of the first and second stages), and in 2002 it was taken by pupils in the second and third stages (sixth and ninth years), and in a sample of schools by pupils in the first stage (fourth year). Standardised tests do not affect the progression of pupils within the education system, but assess the quality of the system itself by gathering data on their performance in the two areas of knowledge referred to above. The main objective is therefore to provide the community – and in particular schools and teachers – with information on the more or less successful aspects of the learning performance of pupils, with a view to improving it in the future.

These tests provide a means of gathering data on the performance of pupils at national and regional level and analysing trends over a period of several years. They also facilitate interpretation of the results obtained in international comparative tests. The setting of this test is the responsibility of the GAVE, while the task of statistical processing and classification is the responsibility of the DEB.

Standards for key competencies

The new National Curriculum specifically mentions that essential competencies must not be considered minimum levels of achievement expected from pupils by the end of basic education. For each stage of basic education, progressive levels of attainment are defined for the subject-specific essential competencies. The general competencies are developed throughout basic education.

Support for pupils with special educational needs

The Decree-Law of 1990, which establishes the principle of free compulsory education, determined that students with special educational needs have to comply with compulsory education and cannot be exempted from attending either mainstream or special education schools. Special education will be provided in specific institutions whenever the type and level of the

pupil's educational needs so require. The principle of integrating children with special needs into mainstream education means that enrolment in a special school is only possible when there is no educational alternative in mainstream schools. Pupils in special schools follow a *currículo alternativo* (alternative curriculum) adapted to their specific needs and potential. At the end of compulsory education, they receive a special certificate stating the knowledge, skills and competencies they have acquired.

Participation in international assessment studies of key competencies

Portugal is participating in the TIMSS and PISA surveys.

Latest developments in relation to key competencies

The new National Curriculum, which came into effect in September 2001, centres on the development of essential competencies. This new approach is now being tested over a three-year period and the DEB is encouraging the entire educational establishment to comment critically and make suggestions for improvement. These proposals will then be taken into consideration when the National Curriculum is reviewed in 2003/04.

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FINLAND

Education is considered one of the fundamental rights of all citizens. Legislation governing primary and secondary education was last reformed in 1999. The new legislation is concerned with the objectives, content and levels of education, as well as with student rights and responsibilities.

The present national core curriculum for basic education was adopted in 1994. A curricular reform is currently under way in Finland. A revised core curriculum for basic education in accordance with the new legislation will be implemented gradually according to the following timetable: forms 1 and 2 in 2002/03 and forms 3 to 9 in 2004/06.

Terms used to express the notion of key competence

In Finland, many educational texts and policy papers refer to a number of different skills, among them, **basic skills, core skills** and – **key skills**. The *Framework Curriculum for Compulsory Education* (OPS 94), for example, sets out a list of aims for education and teaching. The text includes several references to basic skills (in particular those for working life) without actually specifying what these skills are. The major change brought about by this curriculum was the introduction of educational goals no longer based on subject-specific knowledge but on competence, i.e. the application of knowledge.

Selection of key competencies to be acquired by the end of compulsory education

The national core curriculum of 1994 states that general education should seek to nurture readiness to study, ethical and aesthetic sensitivity, a well-developed emotional life, observation and communication skills, the basic skills needed in working life, and the skills required to participate constructively in society. Education means getting information and knowledge from a wide variety of sources and evaluating it critically. What is important is the development of thinking, the intellect, social and communicative skills, and self-expression. Educated people are capable of constructive cooperation, and able to take note of the consequences of their actions, and accept responsibility for them. They are considerate towards others, well-mannered, and able to look after themselves and their surroundings. The national curriculum further states that a citizen needs to be informed about and understand technology and prepared to use it. It also includes a specific reference to the readiness of pupils to learn, which implies willingness to accept responsibility for their studies and the desire to pursue education and training for as long as possible. Successful learning calls for creative thinking, and the ability to solve problems, work in groups and express oneself clearly. All these aims must be pursued simultaneously and with the same sense of urgency. The same national curriculum contains a section entitled 'A set of values for the school'. Reference is made to 'important issues' of which at least four must be addressed when developing school curricula, as follows: promoting sustainable development; cultural identity, multiculturalism and internationalisation; promoting physical, mental and social well-being; and the need for young people to become full citizens and members of society.

According to the new core curriculum for Years 1 and 2 of basic education (2002), readiness to study and to learn involves the following skills: literacy, numeracy, learning and studying skills, membership of a social group and social skills. As in the previous national curriculum, these skills are at no point defined as basic or key competencies.

Similar messages are contained in other policy papers. The paper *Education and Research 1999-2004 Development Plan* states that an all-round education is associated with cognitive abilities, ethical and aesthetic appreciation, a highly developed emotional life, observation and communication skills, the basic qualifications needed for work and the ability to operate constructively as a member of society. The policy paper *Joy of Learning: National Lifelong Learning Strategy 1997* stresses the importance of learning-to-learn as the foundation skill for continuous personal and professional development. The paper *Education, Training and Research in the Information Society. A National Strategy for 2000-2004* focuses on essential skills for the information society: 'Towards the end of the strategy period, media literacy will become a part of good general education. This will mean the ability of citizens to comprehensively utilise both the traditional media as well as new information and communication technology (ICT) in everyday life in order to obtain and build up information, communicate and express themselves. Media literacy and information technology skills are basic skills needed in working life and basic requirements for full membership of a democratic society.'

The following national objectives for basic education were introduced by Decree 1435/2001 and have been applicable since 1 August 2002:

1. Growth to humanity and membership of society which includes
   - becoming a balanced person with a healthy self-esteem;
   - respect for life, nature and human rights;
   - valuing the learning and one's work and that of others;
   - fostering physical, mental and social health and well-being;
   - good manners;
   - responsibility and capability to co-operate;
   - tolerance and trust in peoples, cultures and groups;
   - active membership of society;
   - capability to act in a democratic and equal society;
   - promoting sustainable development.

2. Necessary knowledge and skills
   - awareness of human feelings and needs, religions and views of life, history, culture, literature, nature and health, economy and technology;

- practical skills and creativity and skills in physical exercise;
- development of skills in thinking and communication (mother tongue, second official language, other languages);
- mathematical thinking and its applications;
- mastery of information and communication technologies;
- when teaching in another language than mother tongue the special knowledge and skills related to that language and culture.

3. Promoting educational equality and lifelong learning

- growing and learning as an individual and member of a group;
- independent, critical pursuit of information and versatile capability to co-operate;
- readiness and desire for further studies and life-long learning;
- positive self-image;
- ability to analyse and utilise adopted knowledge and skills.

Acquisition of key competencies

According to the 1994 framework curriculum, the task of the comprehensive school is to promote the all-round personality development of pupils, to support them in acquiring the skills needed for further study and choice of a career, and to lay the foundation for social development and cooperation, with due regard for individual personal differences. Continually, the development has gone towards a curriculum no longer centred on the acquisition of 'know-what' but on enabling pupils to apply the acquired knowledge to everyday life. This marked the transition from a knowledge-based to a competence-based curriculum. Teachers themselves choose the teaching methods they consider appropriate in order to achieve the objectives stated in the curriculum. A high level of personal freedom and the flexibility of the school system should strengthen the self-confidence of pupils and help them towards a clearer perception of their personality, personal goals and opportunities.

The current theory of learning emphasises the active role of pupils as organisers of their own structure of knowledge. According to the framework curriculum, the role of teachers as sources of knowledge and providers of information will decrease in future, while their task of providing counsel, support and encouragement to pupils will increase. Effective teaching no longer centres on the transmission of knowledge from teacher to pupil but requires the former to direct pupils in their studies and plan a suitable learning environment. Since learning involves considerable interaction with the environment, closer attention must be paid to interpersonal relations between pupils and their interaction with the subject of study when planning these learning environments.

The new core curriculum for Years 1 and 2 of basic education (2002) has accepted this current theory of learning and defines the requirements that learning environments have to meet. Pupils should be given opportunities to adopt different skills and methods for learning and working. They should also be exposed to a range of learning strategies suited to specific subjects and age groups. Individual differences in the development, background and learning styles of pupils call for the use of different teaching methods. Moreover, the legislation stipulates that schools must cooperate with parents or others responsible for pupils in their home environment.

Compulsory subjects and their contribution to the development of key competencies

The framework curriculum for the comprehensive school (OPS 94) lists the following compulsory subjects and the competencies they should help develop:

- the mother tongue (self-esteem, communication skills, processing information, cultural knowledge);
- foreign languages and second national language (linguistic abilities, communication skills, cultural knowledge and positive attitude towards other cultures, study skills, self-evaluation);
- mathematics (logical and accurate thinking, problem solving);
- biology, geography, physics, chemistry (knowledge of nature and the environment and cultures; sustainable development; growth into an active, enquiring citizen);
- religion/ethics (self-knowledge, tolerance and equality in a multicultural society, responsibility);
- history and social studies (self-esteem, cultural knowledge, active citizenship);
- music and art (emotional and ethical growth, social skills, cultural knowledge);
- home economics and crafts (responsibility for health and finances, environmental consciousness, creativity, problem-solving);
- physical education (self-knowledge, self-esteem, health consciousness, social skills);
- student counselling (study skills, civic skills, self-esteem).

One of the objectives listed in the national curriculum for the mother tongue is to prepare the ground for learning to learn. Mastery of the mother tongue enables pupils to choose, read, interpret and evaluate different texts including those published in the media. Finnish (or Swedish) is taught as a second language to pupils whose mother tongue is other than Finnish (or Swedish). The aim is to enable them to get along and study in the community, and to become bilingual. According to the core curriculum for mathematics, this subject is the main vehicle for teaching problem-solving skills.

In addition to subject-specific goals, the curriculum also encompasses so-called 'intercurricular issues' which must be taught via different subjects. Examples of such issues are international education, consumer education, traffic education ([34]), family education, health education, media education, environmental education and entrepreneurship education. Also ICT features under the heading of 'intercurricular issues'. ICT skills are not only part of the teaching content of many subjects; they are also recognised as a teaching method. The school curriculum may include ICT as an optional subject. The new core curriculum for Years 1 and 2 of basic education (2002) stipulates that the learning environment shall be equipped in a way that enables pupils to prepare for their role as members of a modern information society. Pupils should, whenever possible, be given the opportunity to use computers, other media techniques and information networks.

Education for entrepreneurship is another cross-curricular issue that receives attention throughout schooling. It is included in school and municipal curricula, and aims to develop an entrepreneurial attitude involving flexibility, initiative, creativity, risk-taking and knowledge about business.

Measurement, assessment and certification of key competencies

According to the Basic Education Act, pupil assessment aims to guide and encourage study, to develop the self-assessment skills of pupils and to promote the development of their self-esteem. Assessment is continuous and mandatory and conducted by the teachers. Pupils are assessed in each subject they study, and those who have successfully completed compulsory education receive a leaving certificate.

In addition, national evaluations are carried out in three different ways: evaluations of learning outcomes, thematic evaluations and policy evaluations (programme evaluations). The National Board of Education is responsible for the implementation of these evaluations and for publishing their findings. In comprehensive school, the purpose of national evaluations is primarily to assess student achievements in terms of skills and knowledge in relation to the objectives of the framework curriculum. As stated in the *Framework for Evaluating Educational Outcomes in Finland*, evaluation focuses 'on the core content of different school subjects and on the central aims of education, namely learning-to-learn, motivation to learn, and communicative competence'. During the later years of comprehensive school, increased emphasis is placed on the evaluation of subject-specific goals and cross-curricular issues. In the final year of comprehensive school, there are regular evaluations of proficiency in the mother tongue and mathematics, in order to find out if the objectives of the framework curriculum are being met. National evaluations of learning outcomes concern only a sample of pupils and do not lead to certification.

Finland has been at the forefront of developing indicators for the assessment of the competence 'learning-to-learn', which is defined as the competence and willingness to adapt to novel tasks.

([34]) Traffic education comprises instruction in road safety and teaching about the effects of traffic and transport on nature, the economy and employment.

Finnish researchers in close co-operation with the National Board of Education ([35]) have worked in the field of defining the concept of learning-to-learn and have developed a comprehensive set of assessment instruments. They are designed to evaluate not only the pupils' cognitive competencies but also their beliefs (with the help of self-report questionnaires). The collected data is then analysed in relation to contextual information, like the pupils' socio-economic background, mother tongue, region or gender. The results should help understand the factors underlying school success and the variations in pupils' achievements while at the same time highlighting the relative role of these different factors. The indicators have been tried in Finland in several studies, including national representative studies of pupils in basic education in 1996, 1997 and 2000. The indicators also allow for the assessment of the motivation for life-long learning.

Finland has few examples of systematic benchmarking and peer reviews within the field of basic skills. However there is rich and direct exchange of good practice between municipalities, teachers, principals, and schools.

Standards for key competencies

The Finnish system does not operate centrally set educational standards. For the purposes of the final assessment of basic education, the National Board of Education has prepared and recommends assessment criteria for the intermediate grade 8 (the assessment scale runs from 4 to 10) in all compulsory subjects.

Support for pupils with special educational needs

According to legislation, each pupil must be provided with instruction, guidance and support in accordance with his/her abilities and needs. One of the aims of the ongoing curricular reform is to strengthen measures in support of those with learning difficulties. This includes the use of suitable methods for early identification, the choice of appropriate teaching methods and the organisation of suitable learning environments. Children with learning difficulties are given special attention already in day care and pre-school education. This includes the necessary methods related to early identification, prevention of learning difficulties and rehabilitation from such difficulties. Those with minor learning or adjustment difficulties are entitled to special education in conjunction with mainstream education. A pupil welfare team is set up involving pupils, their parents, all teachers and other experts with the purpose of preparing a personalised education programme for the pupils concerned. Moreover, pupils who are lagging behind in their lessons due to illness, absence for other reasons or temporary learning problems have the statutory right to receive remedial instruction. Remedial instruction can even be provided to prevent possible learning difficulties.

If a pupil cannot be provided with instruction in a regular teaching group, owing to disability, illness, delayed development, emotional disorder or for some other reason, he or she must be admitted or transferred to special education. Arrangements for special education aim to ensure

([35]) See the publication *Assessing learning-to-learn – a framework*.

that pupils have an opportunity to fulfil their compulsory education requirements in accordance with their abilities and to prepare them for further studies. The teaching and, where appropriate, the curriculum must be adjusted to meet the learning abilities of the pupils concerned. A personal plan covering the organisation of education must be drawn up for each pupil admitted or transferred to special education. Multidisciplinary cooperation as well as involvement of pupil's parents is important in planning and providing the support.

Participation in international assessment studies of key competencies

Finland has so far taken part – or is planning to participate in – the following international assessment surveys: FIMS, FISS, SIMS, SISS, TIMSS, RLS, CIVED, IALS, PISA (2000, 2003, 2006).

Latest developments in relation to key competencies

The new core curriculum for basic education will include one more compulsory subject – health education. To accommodate this additional subject and to increase the time allocated to mother tongue, mathematics, and history and social studies the number of lessons reserved for optional subjects will be reduced. As mentioned earlier, the curriculum should also strengthen measures targeted at children with special educational needs.

Examples of national development programmes relating to the development of key competencies:

- KIMMOKE – *Diversification of Language Teaching Programme in Finland 1996-2000.* A five-year national project to diversify modern language teaching programme and to develop language teaching methods and assessment of learning results on the basis of life-long learning. More information: http://www.edu.fi/projektit/kimmoke/english/index.html
- LUMA – *Development programme for mathematics and science education for 1996-2002.* The project is part of the national joint action launched by the Ministry of Education for raising mathematical and scientific knowledge in Finland to the international level. In Finland, science subjects are considered to include Physics, Chemistry, Biology and Physical Geography. More information: http://www.oph.fi/SubPage.asp?path=1;443;3218;6717;7806
- *The Healthy Self Esteem – Project 1998-2001.* A project for strengthening the pupils' self-esteem and developing the well being of the school community. More information: http://www.oph.fi/english/SubPage.asp?path=447;490;6422
- KOKU – *National Project for Developing the Co-operation between Education and Culture 1998-2001.* Ministry of Education and National Board of Education developed basic education in arts, cultural education, cultural activity and curriculum work of art subjects together with partners from provincial governments, Association of Finnish Local and Regional Authorities and National Board of Antiquities.
- The Finnish Oak – Development programme for teaching of the cultural heritage 1998-2004. A joint project of National Board of Antiquities, National Board of Education and Ministry of Environment to develop the teaching and awareness of the cultural heritage.

- *Information Society Programme 2000-2004.* More information on the national information society strategy and its implementation programme in the fields of education, training and research:
  http://www.minedu.fi/julkaisut/information/englishU/welcome.html;
  http://www.minedu.fi/julkaisut/pdf/tietostrategia/toimeenpanosuunnitelmaENG.pdf
- *Read and Write 2001-2004 [Luku-Suomi].* The aim of the programme is to develop the reading and writing skills of pupils, and to improve their knowledge of literature.
- Development project for foreign language teaching 2002-2004.
- *Creativity and Cultural Education – National project for 2003-2006.* The project aims to develop the creativity and cultural education in the different fields of education and culture, as well as to promote co-operation and research within the field of creativity and cultural education.
- LATU – *development project for special needs education 2002-2004.*

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Sweden

The Education Act (1985:1100) stipulates that all school activity should be carried out in accordance with fundamental democratic, values and that everyone working in schools should encourage respect for the intrinsic value of each person, as well as for the environment we all share (Chapter 1, § 2).

The curriculum for the compulsory school system, pre-school classes and leisure-time centres (later referred to as the curriculum (Lpo 94) entrusts schools with representing these fundamental values and imparting them to pupils. Schools have to encourage all pupils to discover their own uniqueness as individuals, and thus actively participate in the life of society by giving of their best and exercising their freedom responsibly.

Terms used to express the notion of key competence

The term 'key competence' does not figure in documents regulating the Swedish education system. Neither is it to be found in the curriculum, syllabi or any other legislative text. It is the aim of the Swedish education system that all pupils in compulsory school should achieve all the goals stated in the curriculum and the individual subject syllabi. These goals are of two kinds:

- goals to strive towards – specifying the main emphasis of work in schools and thus the qualitative development to be achieved;
- goals to be attained – expressing the minimum level of knowledge in certain subject areas to be achieved upon leaving school.

Amongst these goals you can find such essential competencies as literacy, numeracy, democratic values and ability to learn.

Experience shows that it is very difficult for young people to find paid employment (a major aspect of most adult lives) on the basis of compulsory education alone. The development of key competencies is therefore considered a concept that applies as much to upper secondary education as to compulsory education in the *grundskola*. It is the task of compulsory education to lay the foundations for the continuous acquisition of key competencies during subsequent stages of education.

Selection of key competencies to be acquired by the end of compulsory education

As explained above, the Swedish education system does not rank the goals set out in the curriculum. All goals are considered to be of importance. The curriculum (Lpo 94) includes the general statement that schools should impart the more permanent forms of knowledge that constitute the common frame of reference for everyone. In the two sections on *norms and values* and on *knowledge*, the same curriculum gives a list of general and comprehensive goals, which for the purpose of this study are regarded as key competencies.

Under the heading *norms and values*, it is said that schools should actively and consciously encourage pupils to embrace the common values of our society and express them in practical

daily action. This section contains only goals to strive for. It states that schools should make every effort to ensure that all pupils:

- develop their ability to consciously form and express ethical standpoints based on knowledge and personal experience;
- respect the intrinsic value of other people;
- reject oppression and the abusive treatment of other people and assist in supporting them;
- can empathise with and understand situations experienced by others and develop the will to act in their best interests;
- show respect and care for the immediate environment, as well as for the environment in a wider perspective.

Under the heading *knowledge*, the curriculum (Lpo 94) states that schools should be responsible for ensuring that pupils acquire and develop knowledge that will provide a basis for further education, and that they should also support the harmonious development of pupils. Education should be based on a sense of discovery, curiosity and desire to learn. Teachers should endeavour to balance and integrate knowledge in its various forms. The section refers to both categories of goals, those to strive towards and those to be attained.

Schools should strive to ensure that all pupils:

- develop a sense of curiosity and the desire to learn;
- develop their own individual way of learning;
- develop confidence in their own ability;
- feel a sense of security and learn to consider and show respect in their dealings with others;
- learn to carry out research, and to learn and work independently and together with others;
- strengthen the habit of independently formulating points of view based not only on knowledge but also on rational and ethical considerations;
- acquire sound knowledge in school subjects and subject areas, for their own development and to prepare for the future;
- develop rich and varied language and understand the importance of cultivating it;
- learn to communicate in foreign languages;
- learn to listen, discuss, reason and use their knowledge as a tool to:
- formulate and test assumptions as well as solve problems;
- reflect on experiences;
- critically examine and value statements and relationships, and

- acquire sufficient knowledge and experience to be able to take well-informed decisions about further education and the vocational orientation.

In relation to goals to be attained on completion of compulsory schooling, the same section says that schools are responsible for ensuring that **all** pupils:

- master Swedish and can actively listen and read as well as express ideas and thoughts in the spoken and written language;
- master basic mathematical principles and can use them in everyday life;
- know and understand basic concepts and contexts within the natural sciences, as well as within technical, social and humanistic areas of knowledge;
- are able to express themselves creatively and become more interested in participating in the range of cultural activities that society offers;
- are familiar with central parts of the Swedish, Nordic and western cultural heritages;
- are familiar with the cultures, languages, religions and history of Swedish national minorities;
- are able to develop and use their knowledge and experience in as many different forms of expression as possible, covering language, pictures, music, drama and dance;
- have developed their understanding of other cultures;
- can communicate in speech and writing in English;
- grasp the basic principles underlying society's laws and norms, as well as their own rights and obligations in school and society;
- understand the ways in which different countries and parts of the world are interdependent;
- know the requirements for a good environment and understand basic ecological contexts;
- have a sound knowledge of the preconditions for good health, including the importance of lifestyle for health and the environment;
- are knowledgeable about the nature and purpose of the media;
- can use information technology as a tool in their search for knowledge and to develop their learning;
- acquire deeper knowledge within a number of individually chosen subject areas.

Acquisition of key competencies

Families bear the prime responsibility for a child's upbringing and development. The foundations for a sense of security and self-esteem are laid in the home. Responsibility for a child's

schooling is shared between parents or guardians and the school. This implies close cooperation between home and school.

The curriculum (Lpo 94) stipulates that schools must not only impart knowledge of fundamental democratic values but also employ democratic working methods themselves. Pupil involvement in implementing the syllabi is an important aspect of this process. The choice of teaching methods and materials is a matter for both teachers and pupils. Pupils should be given the opportunity to observe – but also to try for themselves – the various ways of expressing knowledge and feelings.

Guidelines for teachers to help pupils attain the different goals listed above are also part of the curriculum (Lpo 94). The teaching of norms and values requires that teachers should:

- clarify and discuss with pupils the basic values of Swedish society and their consequences in terms of the actions of individuals;
- openly present and discuss different values, ideas and problems;
- be observant and, with other school staff, take the necessary steps to prevent and counteract all forms of abusive treatment;
- develop, with the pupils, rules for working and participating in the group;
- work together with the home in the upbringing of pupils and, in so doing, clarify the norms and rules of the school as a basis for work and cooperation within it.

To facilitate the acquisition of knowledge, teachers should:

- take as their starting point each pupil's individual needs, circumstances, experience and way of thinking;
- reinforce the desire of pupils to learn, as well as their confidence in their own ability;
- provide scope for pupils to exercise their creative ability and use different means of expression;
- stimulate, guide and give special support to pupils who have difficulties;
- cooperate with other teachers in pursuing the aims of education;
- organise and carry out work so that pupils:
  - develop in accordance with their own capacity, and at the same time are stimulated into using and developing all their ability;
  - experience that knowledge is meaningful and that their own learning is progressing;
  - receive support in their linguistic and communicative development;
  - gradually receive more tasks to perform increasingly independently, for which they also accept increasing responsibility;

- are given a framework and context for study, as well as opportunities for more in-depth study of subjects;
- are provided with opportunities to work along interdisciplinary lines.

The school head is both the pedagogical leader and head for teaching an non- teaching staff. The school head is thus responsible for making sure that the activity of the school as a whole is focused on attaining the national goals. The school head is responsible for the results of the school and has also specific responsibilities according to the curriculum. Some of these are the responsibility for ensuring that:

- teaching in different subject areas is coordinated so that the pupils are provided with the opportunity of broadening their overall understanding of wider fields of knowledge;
- inter disciplinary areas of knowledge are integrated in the teaching of different subjects. Such areas cover, for example; the environment, traffic, equality, consumer issues, sex and human relationships as well as the risks posed by tobacco, alcohol, and other drugs;
- the school's international links are developed.

Compulsory subjects and their contribution to the development of key competencies

Teaching of the following subject areas (in alphabetical order) is compulsory during the period of compulsory education: arts, English, modern languages (except English), mathematics, physical education and health, science studies (biology, physics and chemistry), social studies (history, geography, religion and civics) and Swedish. The curriculum (Lpo 94) states only the total number of teaching hours (6,665) that must have been provided on completion of the nine years of compulsory education. Each school is free to decide how much time is allocated to individual subjects.

The introduction to each syllabus lists the aims of teaching the subject and its role in education. It also explains how this subject contributes to fulfilling the goals of the curriculum and why its study satisfies different social and personal needs. Common to all subject areas is the aim of developing social, critical and creative thinking, communication and learning-to-learn skills. All syllabi stress the importance of demonstrating and exploiting the interrelationship between the knowledge associated with different subject areas.

The teaching of **arts** aims to develop the ability to artistically express certain opinions related to experience and to demonstrate knowledge of the arts. It encourages pupils to enjoy their freedom of expression and right to cultural diversity. The visual arts provide opportunities to reflect on how people think, create and experience the world at different points in time, and as such they constitute a valuable medium for learning.

The syllabus for **English** considers it to be the dominant world language. The ability to use English enables people to establish and maintain international social and professional contacts,

keep up to date with new developments and pursue further studies. In addition, competence in English develops intercultural competence and awareness of the process of learning a language. Syllabi for other modern languages reflect the same aims in terms of communicative, intercultural, social and learning-to-learn skills as does the English language syllabus.

The subject area **physical education and health** aims to develop the physical, psychological and social abilities of pupils, as well as providing them with knowledge of the effect of lifestyle on health. This subject area fosters cooperation, understanding and respect for others within and across different cultures.

Teaching of **mathematics** should create an interest in the subject and demonstrate its importance to all cultures. It should prepare pupils to make informed decisions when faced with several choices. At a practical level, pupils should learn to use pocket calculators and computers. Knowledge of basic mathematical concepts, methods and instruments should help develop numerical and spatial understanding and the ability to communicate mathematically.

Science studies are presented in a common syllabus for biology, physics and chemistry. Natural sciences are considered a central part of western cultural tradition and their study should develop knowledge about life in its different forms and stimulate the desire for further exploration. Education also seeks to create an interest in sustainable development and the preservation of nature.

Geography, history, religion and civics are grouped under the subject area **social studies**. The main aim is to offer an understanding of how individuals shape and are shaped by their surroundings. It should lay the foundations for active participation of pupils as responsible citizens in democratic societies at local, regional and international levels. The syllabus for civics, in particular, stresses the importance of the ability to search for, examine, structure and evaluate facts and to integrate and use fresh knowledge. Equal rights for both sexes should be actively and consciously clarified.

The subject of **Swedish** is the main vehicle for language development, as it offers pupils language skills necessary for life inside and outside school. Pupils should develop the ability to speak, listen, see, read and write, and to experience and learn from literature, films and the theatre. Culture and language are inseparable and good language skills support the development of cultural and personal identity. Language and literature are the core of this subject, as they enable pupils to acquire knowledge about and communicate with their surroundings.

Pupils with another mother tongue than Swedish may study **Swedish as a second language** instead of Swedish. The subject aims at giving these pupils a mastery of Swedish that will enable them to fully assimilate other subjects, and have active social relationships and be a part of Swedish society. This subject demands greater flexibility than other subjects, as there may be considerable differences in language skills among pupils and they may have different cultural backgrounds.

Measurement, assessment and certification of key competencies

Since 1995, the achievements of pupils have been compared using national tests in the fifth and ninth year of schooling. Participation in the tests in Swedish, English and mathematics at the end of the fifth year is voluntary, with each school deciding whether or not it wants to take part in them. In the ninth year, however, national tests in these subjects have been made obligatory. Grades indicate the extent to which individual pupils have attained the goals of the curriculum and the syllabus for each subject. They are awarded on a three-point scale: 'pass' (G), 'pass with distinction' (VG) and 'pass with special distinction' (MVG). The grade 'pass' certifies that the goals indicated in the syllabi have actually been reached. Grading is based on nationally devised grading criteria in turn based on the goals set out in the syllabus for each subject. A final school-leaving certificate *(slutbetyg från grundskolan)* showing the grades obtained in each subject is awarded at the end of the ninth year. Pupils who do not obtain a 'pass' in a particular subject are not awarded a grade in that subject. Instead, a written assessment is made which may, for example, refer to a pupil's aptitude for higher studies.

Standards for key competencies

The government has established a separate syllabus for each subject taught at compulsory school. Like the curriculum (Lpo 94), these syllabi set out goals to strive for and goals to be attained. The latter are defined for pupils in Years 5 and 9.

Support for pupils with special educational needs

All compulsory schools are comprehensive and co-educational. The overriding aim is that everybody should receive not the same education but an equivalent education. Account must be taken of the varying circumstances and needs of pupils and the variety of ways in which certain goals can be achieved.

The curriculum (Lpo 94) states that education should be adapted to the individual circumstances and needs of pupils. Schools have a special responsibility for those who, for a variety of reasons, experience difficulty in achieving educational objectives. The curriculum sets out specific aims in Swedish and English for special schools educating pupils who are deaf or whose hearing is impaired. On leaving school, these pupils should be bilingual in Swedish and sign language and be able to communicate in writing in English. A separate set of goals is prescribed for pupils with learning disabilities and severe learning disabilities, respectively.

Participation in international assessment studies of key competencies

Sweden has participated in a number of surveys conducted by the OECD and IEA, among them: FIMS (1964), FISS (1970-71), SIMS (1980-82), SISS (1983-84), RLS (1989-95), TIMSS (1993-95), IALS (1994), CIVED (1995-97), PIRLS (1999-2003), PISA (2000, 2003, 2006).

Latest developments in relation to key competencies

Sweden does not plan any curricular changes concerning key competencies.

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United Kingdom (England/Wales/Northern Ireland)

The majority of information provided below refers specifically to England. However, key points of similarity and difference for Wales and Northern Ireland are set out in the relevant sections of the text.

Terms used to express the concept of key competence

The term key skills is used in England, Wales and Northern Ireland to describe those 'generic skills which individuals need in order to be effective members of a flexible, adaptable and competitive work force and for lifelong learning.' ([36])

The genesis for key skills was the concern from employers in the 1980s that their young recruits did not have the general skills needed in effective employees. The skills identified deliberately went beyond basic literacy and numeracy. Their focus was the ability to use skills in a wide range of contexts and to make judgements about what skills to use and when. The 1995 revision of the National Curriculum reduced the mandatory content of the curriculum. One of the aims of this change was to give schools the opportunity to devote more time to develop the three key skills of communication, application of number and information technology (IT). Also in 1995, the Government commissioned a review of the framework of qualifications available to 16- to 19-year-olds in England, Wales and Northern Ireland. The final report (Dearing, 1996) recommended that qualifications in key skills should be available in England, Wales and Northern Ireland across both work-based and academic routes. Qualifications in the key skills of communication, application of number and IT were introduced widely in September 2000. The main purpose of the new qualifications was to encourage more 16- to 19-year-olds to develop their key skills to higher levels. However, the qualifications are not confined to this group and are also available for 14- to 16-year-olds in compulsory education. In England and Wales, key skills are now highlighted in the current National Curriculum – introduced in 2000 – to show how they relate to subjects across the curriculum. The Northern Ireland Curriculum, last revised in 1996 and currently under review, does not include explicit references to key skills. The review proposes a restructuring of the key stage 4 (age 14-16) curriculum so that the statutory curriculum is set out in just four components: key transferable skills; personal, social and health education; citizenship; and education for employability.

The term basic skills is also used, particularly in the context of adult literacy and numeracy programmes. The Basic Skills Agency defines **basic skills** as 'the ability to read, write and speak in English (or Welsh), and to use mathematics at a level necessary to function at work and in society in general. ' ([37])

([36]) Department for Education and Skills A to Z of School Leadership and Management website: http://www.dfes.gov.uk/a-z/KEY%5FSKILLS.html

([37]) Basic Skills Agency website:http://www.basic-skills.co.uk/about/default.asp?site=1&lng=1&cat=0&age=0&rgn=0&med=0&guide=off&bsk=02902040598710111
The Basic Skills Agency is the national development agency for literacy, numeracy and related basic skills in England and Wales. It works from cradle to grave to improve the basic skills of children, young people and adults. It is an independent organisation and a registered charity. It is mainly funded by the Government via grants from the Department for Education and Skills and the Welsh Assembly Government.

Selection of key competencies to be acquired by the end of compulsory education

The current National Curriculum, introduced in schools in England in September 2000, includes the following guidance on the promotion of skills:

> At all key stages, pupils learn, practice, combine, develop and refine a wide range of skills in their work across the National Curriculum… Six skill areas are described as **key skills** because they help learners to improve their learning and performance in education, work and life. These key skills are embedded in the National Curriculum:
>
> - Communication
> - Application of Number (AoN)
> - Information Technology (IT)
> - Working with Others (WWO)
> - Improving Own Learning and Performance (IOLP)
> - Problem Solving

The Government has recently put in place national strategies which support the development of the **first three** of these six key skills within compulsory education in England:

- The National Literacy Strategy (NLS) supports the development of **communication** skills in primary schools.
- The National Numeracy Strategy (NNS) supports the development of the skill of the **application of number** in primary schools.
- The Key Stage 3 National Strategy is now being introduced into secondary schools, with the intention of making improvements across the whole of the curriculum. It places a particular focus on **English** and **mathematics**, where the approach follows on from the approach of the NLS and the NNS, and on science and **information and communication technology (ICT)**.

Literacy is described within the National Literacy Strategy as:

> 'uniting the important skills of reading and writing. It also involves speaking and listening, which, although they are not separately identified in the framework for teaching, are an essential part of it. Good oral work enhances pupils' understanding of language in both oral and written forms and of the way language can be used to communicate. It is also an important part of the process through which pupils read and compose texts.'

Numeracy is described within the National Numeracy Strategy as:

> 'a key life skill, without which, children will be disadvantaged throughout life.'

ICT capability is described within the Key Stage 3 National Strategy for ICT as:

> 'much more than the acquisition of basic skills and techniques. It develops pupils' ability to use the technology imaginatively and flexibly. It encompasses the ability to identify, understand and apply appropriate knowledge, skills and understanding.'

In addition to the above-mentioned key skills, the National Curriculum also provides opportunities for the promotion of **thinking skills** (information processing skills, reasoning skills, enquiry skills, creative thinking skills, evaluation skills) and other aspects of the school curriculum (**financial capability, enterprise and entrepreneurial skills, work-related learning, and education for sustainable development**).

Acquisition of key competencies

The **National Curriculum** is the main vehicle for the development of key skills in **England**. The National Curriculum programmes of study are mandatory. The National Curriculum also contains mandatory general teaching requirements which include a statement on the 'Use of language across the curriculum' and a statement on the 'Use of information and communication technology across the curriculum'. The National Curriculum and associated documents also include non-mandatory examples of how the programmes of study can promote the development of key skills. Other non-mandatory guidance on teaching to promote key skills and to enable students to see the relevance of their studies to the world of work is provided by the Qualifications and Curriculum Authority in *Key Skills for Developing Employability* (QCA, 2001).

Although there are no general, centrally issued recommendations on teaching methods, recent policy initiatives have introduced, for the first time, very specific frameworks for the teaching of literacy and numeracy in primary schools in England. These frameworks are not statutory, but the large majority of primary schools follow their recommendations. The frameworks aim to shift the balance of teaching from individualised work to direct teaching (characterised as oral, interactive and lively) and whole class teaching. Under the **National Literacy Strategy** (NLS), launched in 1998, all primary pupils receive a daily, dedicated literacy hour, providing a balance of word, sentence and text level work. Under the **National Numeracy Strategy** (NNS), introduced in 1999, schools now teach a daily mathematics lesson which uses a three-part structure, starting with oral work and mental calculation using whole class teaching. Schools are supported in the implementation of these strategies by the provision of teaching materials, guidance and professional development opportunities.

From September 2001, the **Key Stage 3 National Strategy** was introduced into secondary schools in England. This initiative aims to boost the reading, writing and mathematics skills of pupils aged 11 to 14, and to motivate, inspire and raise their expectations. The first year of the strategy saw the introduction of the English and mathematics strands; these aim to build on the daily literacy and numeracy hours in primary schools. A key element of the strategy is to support children who start secondary school below the level expected for their age in English and mathematics, by providing programmes to help them catch up with their peers early on.

But the strategy also caters for more able learners as well, and aims to promote higher standards for all pupils, whatever their starting point and ability level. The introduction of the strategy is supported by the provision of teaching materials, guidance and professional development opportunities. The strategy will be extended to include science, ICT and other subjects in the 2002/03 school year.

The development and implementation of these policy initiatives is managed by **the Department for Education and Skills' Standards and Effectiveness Unit (SEU)**. The SEU was established to implement the Government's policies for raising standards of education in schools in England.

The Government also supports learning activity outside normal lessons. These **study support activities** are described, in *Extending Opportunity: A National Framework for Study Support* (DfEE, 1998) as:

> 'learning activity outside normal lessons which young people take part in voluntarily. Study support is, accordingly, an inclusive term, embracing many activities - with many names and many guises. It can include help with key skills, including literacy, numeracy and ICT. Its purpose is to improve young people's motivation, build their self-esteem and help them to become more effective learners. Above all, it aims to raise achievement. Another area receiving government support is family literacy and numeracy projects. These are seen not only as a means of targeting parents with literacy and numeracy skills needs, but also as a way of helping parents support the language, literacy and numeracy development of their children.'

The **Basic Skills Agency** is the national development agency for literacy, numeracy and related basic skills in **England and Wales**. It is mainly funded by the Government via grants from the Department for Education and Skills and the Welsh Assembly Government. As well as developing effective approaches for improving the basic skills of adults, the Agency develops and supports family literacy and numeracy programmes, and develops literacy and numeracy resources aimed at schools.

In **Wales**, the **National Curriculum** includes mandatory common requirements for teachers to provide opportunities for pupils to develop and apply a range of key skills. The numbers and range of such opportunities are for teachers to determine. The Qualifications, Curriculum and Assessment Authority for Wales (ACCAC) has produced *Skills Across the Curriculum: Key Stages 1-3* (ACCAC 2002) to help schools identify opportunities for the development and application of these skills across the curriculum.

The **National Basic Skills Strategy for Wales** ([38]) sets out the strategy for improving the literacy and numeracy of children, young people and adults. In addition, each local education authority (LEA) has produced its own individual literacy and numeracy strategies.

([38]) National Strategy for Basic Skills in Wales website: http://www.basic-skills-wales.org/index-eng.php

In **Northern Ireland** the Department of Education has produced *A Strategy for the Promotion of Literacy and Numeracy in Primary and Secondary Schools in Northern Ireland* (DENI, 1998).

Compulsory subjects and their contribution to the development of key competencies

The **National Curriculum** in both **England and Wales** distinguishes between core subjects (English, Welsh in Wales, mathematics, science) and the other foundation subjects (design and technology, ICT, history, geography, modern foreign languages, art and design, music, physical education). In addition, citizenship became the 12th National Curriculum subject in England from September 2002. All these subjects, together with religious education, careers education and sex education, are statutory for at least part of compulsory education. In England, the core subjects plus design and technology, ICT and physical education are statutory throughout compulsory education. In Wales, only the core subjects (but not English for 5- to 7-year-olds in Welsh-speaking schools) and physical education are statutory throughout compulsory education.

In **Northern Ireland**, only the three core subjects (English, mathematics and science) and physical education are statutory throughout compulsory education. The Northern Ireland Curriculum also includes the following mandatory cross-curricular themes: education for mutual understanding; cultural heritage; health education (including sex education); economic awareness (post-primary schools only); careers education (post-primary schools only) and information technology.

The **National Curriculum** in **England** sets out how key skills are embedded in the curriculum:

Communication: The key skill of communication includes skills in speaking, listening, reading and writing. Skills in speaking and listening include the ability to speak effectively for different audiences; to listen, understand and respond appropriately to others; and to participate effectively in group discussion. Skills in reading and writing include the ability to read fluently a range of literary and non-fiction texts and to reflect critically on what is read; and the ability to write fluently for a range of purposes and audiences, including critical analysis of their own and others' writing. Opportunities for developing this key skill are provided through English in particular and through pupils' use of language across the curriculum.

Application of number: The key skill of application of number includes developing a range of mental calculation skills and the ability to apply them within a variety of contexts. Skills include developing the understanding and use of mathematical language related to numbers and calculations in order to process data, solve increasingly complex problems and explain the reasoning used. Pupils need to be able to apply calculation skills and the understanding of number to problems in other National Curriculum subjects and to real-life situations. Opportunities for developing this key skill are provided explicitly in mathematics.

Information technology: The key skill of information technology includes the ability to use a range of information sources and ICT tools to find, analyse, interpret, evaluate and present information for a range of purposes. Skills include the ability to make critical and informed

judgements about when and how to use ICT for maximum benefit in accessing information, in solving problems or for expressive work. The ability to use ICT information sources includes enquiry and decision-making skills, as well as information-processing and creative thinking skills and the ability to review, modify and evaluate work with ICT. Opportunities for developing this key skill are provided explicitly through the subject of ICT and through pupils' use of ICT across the curriculum.

Working with others: The key skill of working with others includes the ability to contribute to small-group and whole-class discussion, and to work with others to meet a challenge. If pupils are to work with others, they must develop social skills and a growing awareness and understanding of others' needs. All subjects provide opportunities for pupils to cooperate and work effectively with others in formal and informal settings, to appreciate the experience of others and consider different perspectives, and to benefit from what others think, say and do.

Improving own learning and performance: The key skill of improving own learning and performance involves pupils reflecting on and critically evaluating their work and what they have learnt, and identifying ways to improve their learning and performance. They need to be able to identify the purposes of learning, to reflect on the processes of learning, to assess progress in learning, to identify obstacles or problems in learning and to plan ways to improve learning. All subjects provide opportunities for pupils to review their work and discuss ways to improve their learning.

Problem solving: The key skill of problem solving involves pupils developing the skills and strategies that will help them to solve the problems they face in learning and in life. Problem solving includes the skills of identifying and understanding a problem, planning ways to solve a problem, monitoring progress in tackling a problem and reviewing solutions to problems. All subjects provide pupils with opportunities to respond to the challenge of problems and to plan, test, modify and review the progress needed to achieve particular outcomes.

Measurement, assessment and certification of key competencies

In England, the Secretary of State for Education and Skills is advised on all matters affecting the assessment of the National Curriculum and the national qualifications system used in schools by the Qualifications and Curriculum Authority (QCA), a statutory non-departmental public body. The QCA works closely with the Qualifications, Curriculum and Assessment Authority for Wales (known by its Welsh acronym ACCAC), which performs similar functions in relation to Wales, and with the Northern Ireland Council for the Curriculum, Examinations and Assessment (CCEA) which performs these functions for Northern Ireland.

The National Curriculum describes how pupil performance should be assessed against attainment targets. Attainment targets set out the **knowledge**, **skills** and **understanding** that pupils of different abilities and maturities are expected to have by the end of each key stage. Attainment targets consist of level descriptions of increasing difficulty describing the types and range of **performance** that pupils working at that level should characteristically demonstrate. The skills of literacy and numeracy are assessed through the statutory National Curriculum

assessment arrangements for English and mathematics at the end of key stages 1, 2, and 3 (ages 7, 11 and 14). The following table sets out the statutory assessment arrangements for pupils at these stages in **England**:

FIGURE 12: STATUTORY ASSESSMENT ARRANGEMENTS FOR PUPILS AT KEY STAGES 1 TO 3, SCHOOL YEAR 2001/02

End of key stage 1, age 7	Statutory assessment in English, mathematics and science involves: Externally provided written tests in reading comprehension (English), spelling (English) and mathematics. These are internally marked and externally moderated. Externally provided classroom-based tasks in reading (English), writing (English) and mathematics. Teacher assessment against the attainment targets in English, mathematics and science.
End of key stage 2, age 11	Statutory assessment in English, mathematics and science involves: Externally provided (and marked) written tests in English (three tests – reading, writing, spelling and handwriting), mathematics (three tests - one without calculator, one with calculator, and mental arithmetic test) and science (two tests). Teacher assessment against the key stage 2 attainment targets in English, mathematics and science.
End of key stage 3, age 14	Teacher assessment of pupils' work in relation to all the attainment targets in English, mathematics, science, history, geography, design and technology, ICT, modern foreign languages, art and design, music, and physical education. The teacher assessment draws on evidence of oral, written and practical work in class, homework and school examinations and tests. Externally set and marked National Curriculum tests in: English; mathematics (includes a mental arithmetic test; one test paper in which no calculators are allowed; and one in which calculators are permitted); and science.

Arrangements in **Wales** are broadly similar, although national tests and tasks at the end of key stage 1 (age 7) are not compulsory. Pupils in Welsh-speaking schools or classes also take tests in Welsh.

In **Northern Ireland**, pupils are not required to sit formal tests at the end of key stages 1 and 2 (ages 7 and 11); CCEA provides assessment materials and moderates the assessments. There is no statutory assessment in science in key stages 1 and 2. Arrangements at the end of key stage 3 are similar to arrangements in England.

At the end of key stage 4 (age 16), there are no statutory requirements for pupils to take a qualification in any particular subject in **England, Wales and Northern Ireland**. However, schools are expected to enter all pupils for appropriate external qualifications. The qualification most commonly taken at age 16 at the end of key stage 4 is the General Certificate of Secondary Education (GCSE). The GCSE consists of a range of examinations in single subjects, including English and mathematics and ICT. GCSEs are externally set and marked by independent awarding bodies working within a nationally regulated framework. GCSE assessment

schemes may include internally assessed coursework for which there is a system of external moderation as well as formal externally marked written examinations.

The individual key skills of communication, application of number and IT were included in the combined **key skills qualification** introduced in September 2000 across England, Wales and Northern Ireland. These three key skills were also made available as separate qualifications in their own right. In July 2001, the Secretary of State accepted the QCA's advice that the combined key skills qualification should be phased out from September 2001, but that certification through the individual key skills qualifications should remain. The main purpose of the qualifications is to encourage more 16- to 19-year-olds to develop their key skills to higher levels, and school-leavers who have not achieved a minimum qualification (a good GCSE) in each of English, mathematics and ICT are supported in pursuing one or more key skills qualifications (in communication, application of number and/or information technology) via further education or a work-based route. However, the qualifications are not confined to this group; they are also available for 14- to 16-year-olds in compulsory education. Assessment units in the wider key skills (working with others, problem solving, improving own learning and performance) are also offered and certificated by key skills awarding bodies. These key skills units are not externally assessed and are therefore not regarded as qualifications within the National Qualifications Framework.

Standards for key competencies

The National Curriculum establishes national standards for the performance of all subjects it includes. These standards, known as attainment targets, set out the knowledge, skills and understanding that pupils of different abilities and maturities are expected to have at the end of each key stage. Except in the case of citizenship, attainment targets consist of eight level descriptions of increasing difficulty, plus a description for exceptional performance above level 8. The descriptions set out the types and range of performance that the majority of pupils should characteristically demonstrate by the end of a key stage. They are the basis for judging pupils' performance.

At the age of 7 (end of key stage 1), most pupils are expected to achieve level 2 on the National Curriculum scale, and at the age of 11 (end of key stage 2), they are expected to reach level 4. Pupils' performance at age 14 (end of key stage 3) should match the description for levels 5 or 6.

The Department for Education and Skills has set a range of learning targets for England for achievement across the ability range, at age 11, 14 and 16 in nationally recognised qualifications at age 16. The targets are expressed as the percentage of pupils that are expected to reach a certain level of achievement in a particular subject in National Curriculum assessment tests and nationally recognised qualifications. For example, by 2004, 75 per cent of 14-year-olds should achieve the expected level five or above in the national assessments in English, mathematics and ICT. Similar learning targets have been established for Wales and Northern Ireland.

Support for pupils with special educational needs

The National Curriculum in England includes a statement on inclusion, defined as providing effective learning opportunities for all pupils. Government-provided teaching resources include materials supporting the development of key skills across the curriculum for pupils with learning difficulties.

The National Literacy Strategy, National Numeracy Strategy and the Key Stage 3 National Strategy all include guidance and support materials for teachers catering for pupils with particular needs, such as lower-attaining pupils, pupils with special educational needs, gifted and talented children and children with English as an additional language. The strategies are also supported by specific grants which are available to enable schools to run activities such as summer schools and literacy and numeracy catch-up programmes for pupils who have failed to reach the level of literacy or numeracy expected for their age group.

There are also nationally recognised qualifications aimed at accrediting the achievements of low-attaining pupils, for example those with special educational needs. These entry level certificates are available in a wide range of subjects.

Participation in international assessment studies of key competencies

England participated in the following surveys: FIMS (1964), FISS (1970-71), SIMS (1980/1982), SISS (1983-84), IEAP1 (1988), IEAP2 (1991), TIMSS (1995/1999), CIVED (1994/2002) ([39]), IALS (1997), TIMSS-R (1997/2000), SITES (1999/2002), PIRLS (1999/2003), PISA (2000).

Wales participated in IALS (1997). Northern Ireland was included in IALS (1997) and PISA (2000). Information is not available on the participation of Wales and Northern Ireland prior to 1994.

Regarding future studies, England, Wales and Northern Ireland will be taking part in PISA (2003) and TIMSS (2003). No decision has been taken on participation in the remaining studies: PISA (2006), COMPED and ALL.

Latest developments in relation to key competencies

In England, the most recent initiatives in support of key skills are the launching of the National Literacy Strategy, the National Numeracy Strategy and the Key Stage 3 National Strategy (for details see the section 'Acquisition of key competencies').

In May 2002, the Department for Education and Skills set out a range of proposals for the reform of the curriculum for 14- to 19-year-olds in England. The Green Paper *14-19: Extending Opportunities, Raising Standards aims* to establish a coherent 14-19 phase of education which will broaden the skills acquired by all young people to improve their employability, bridge the skills gap identified by employers and overcome social exclusion. The

([39]) CIVED is known in England as the IEA Citizenship Education Study.

proposals include a more flexible curriculum for key stage 4 (14-16), alongside measures to ensure that all young people have a solid grounding in the key skills of literacy, numeracy and ICT. The green paper also sets out an expectation that all young people should participate in active citizenship, wider interests and work-related learning. These enrichment activities are seen as making a critical contribution both to personal development and to the acquisition of a number of other skills, including the wider key skills.

In Northern Ireland, the Northern Ireland Curriculum is currently under review, and the Northern Ireland Council for the Curriculum, Examinations and Assessment is consulting on proposals for a more radical approach to the curriculum for the 11-16 age range. The proposals include restructuring the key stage 4 (14-16) curriculum, so that the statutory curriculum is set out in just four components: key transferable skills (application of number, communication, IT, problem-solving, managing one's own learning, and working with others); personal, social and health education; citizenship; and education for employability.

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Terms used to express the notion of key competence

'The Scottish education system employs the term Core Skills to describe the broad, transferable skills that people need to be full, active and responsible members of society' ([41]). Core Skills provide a strong foundation for citizenship, employment and lifelong learning. In a rapidly changing world, competence in these skills is essential as a foundation for lifelong personal development. These are transferable skills which encourage young people to be lifelong learners, confident in their abilities to develop and use skills and knowledge in a range of different contexts at different times. The same Core Skills are used in schools, colleges and in the workplace.

Selection of key competencies to be acquired by the end of compulsory education

There has been discussion of Core Skills in Scottish education since the late 1970s. In 1994, the publication *Higher Still, Opportunity for All* articulated Core Skills clearly. This publication was looking at the revision of the upper secondary curriculum. Following this, a separate consultation document was published in April 1995 and it was simply called *Core Skills*. This selection was later extended to the entire education system.

FIGURE 13: CORE SKILLS AND THEIR COMPONENTS IN THE SCOTTISH EDUCATION SYSTEM

Core Skill	Components	Further Information
Communication	Oral Communication Written Communication	Covers reading, writing and speaking effectively. (Also includes signing for the deaf.)
Numeracy	Using Graphical Information Using Number	Covers calculating accurately and using tables, graphs, diagrams and maps effectively.
IT	Using Information Technology	Covers operating IT systems and using software applications.
Problem Solving	Critical Thinking Planning and Organising Reviewing and Evaluating	Covers analysing problems, planning solutions to the problems, and organising, completing and evaluating activities to solve problems.
Working with Others	Working with Others	Covers using interpersonal and self organisation skills to work effectively with other people.
Each core skill is defined at five levels		

Source: Catalogue of Core Skills in National Qualification 2001/2002, Scottish Qualifications Authority, August 2001.

In addition to this grid of Core Skills, several policy papers refer to the core skills of literacy and numeracy. The Scottish Executive's National Priorities in Education, which were approved by the Scottish Parliament in December 2000, provide a national vision towards which all education authorities and schools are now working. Five priority areas are defined: Priority

([41]) *Catalogue of Core Skills in National Qualification 2001/2002*, Scottish Qualifications Authority, August 2001.

Number 1 is 'to raise standards of educational attainment for all in schools, especially in the core skills of literacy and numeracy, and to achieve better results in national measures of achievement, including examination results.' The aim of Priority 5 is 'to equip pupils with the foundation skills, attitudes and expectations necessary to prosper in a changing society and to encourage creativity and ambition.'

Also the National Statements on Literacy and Numeracy drafted by the Scottish Executive refer to literacy and numeracy as the foundation stones of education and classify them as core skills.

Acquisition of key competencies

Core Skills are integrated into all levels of primary and secondary education. Guidance for schools is provided through national guidelines ([42]). As guidelines, these are not mandatory. However, in practice all schools offer opportunities to develop all Core Skills, as the principle national qualifications, Standard Grades and new National Qualifications, assess Core Skills. Standard Grades are two year courses which are assessed by external examination at the end of the course, normally when candidates are aged 16. New National Qualifications have replaced the Scottish Higher and Certificate of Sixth Year Studies, and in some schools they have also replaced Standard Grades. They are available at seven levels: Access 1, 2 and 3, Intermediate 1 and 2, and Higher and Advanced Higher. National Courses are made up of blocks of study called National Units. Higher and Advanced Higher courses are usually taken at ages 17 and 18 respectively.

As Core Skills are mainly taught through subjects, curricula focus on both the transmission of knowledge and skills, and on the development of competencies. The competencies of Core Skills have always been included in the curriculum, but implicitly rather than explicitly. With the introduction of new National Qualifications, formal recognition is now given to the Core Skills which are developed and assessed in traditional subjects. It is also possible to take Core Skill Units, independent of curriculum subjects. Guidelines on Core Skills do not prescribe any specific approach for teaching methods. This is because Core Skills can be taken within a range of subjects and contexts.

There has been a shift towards the use of information and communication technology (ICT) and the development of entrepreneurship in a schools setting in recent years. For example, Young Enterprise Scotland was introduced to encourage and develop enterprise skills in school candidates in the final two years of the 6-year secondary school (S5 or S6). The scheme gives participants the opportunity to gain practical, hands-on experience of the business world. Participants are encouraged to set up mini-enterprises, supported by volunteers from business and education. The scheme can be used as a vehicle for delivering the Core Skill 'Working with Others' in schools, colleges and social inclusion groups.

([42]) *5-14 National Guidelines: The Structure and Balance of the Curriculum – Guide for Teachers and Managers*, Learning & Teaching Scotland 2000.

Compulsory subjects and their contribution to the development of key competencies

The only subject which is compulsory by law in schools in Scotland is religious education. However, national guidelines on the curriculum are normally adhered to, which recommend provision of a wide range of subjects. Therefore pupils have the opportunity to develop and be assessed on all Core Skills.

Measurement, assessment and certification of key competencies

Core skills are a fully articulated element of new National Qualifications and Standard Grades. Core Skills have been given greater emphasis through the development of new National Qualifications.

In Scotland there is a National Core Skills Framework. Standard Grade courses have been audited to determine which Core Skills were automatically covered in the assessment arrangements, and at what level. In addition, every National Unit and National Course offered by the Scottish Qualifications Authority (SQA) has been assessed to determine what Core Skills are contained in that course or unit and to what level.

The results are published in the *Catalogue of Core Skills in National Qualifications 2001/2002 (BA0906, September 2001)*. This has been produced by the SQA. It defines Core Skills at levels 2-6 in the Scottish Credit and Qualifications Framework (see below) – these are the levels of Access 2, Access 3, Intermediate 1, Intermediate 2 and Higher qualifications. For example if a young person gains an award in a mathematics Higher course, they will be judged to have demonstrated ability in the Core Skills of 'Problem Solving' (critical thinking) and 'Numeracy' (using numbers and using graphical information) at the level of Higher.

This information will contribute to a young person's Core Skills profile and this information will be on their certificate along with other Core Skills information from other courses.

The acquisition of Core Skills in schools is mainly measured as part of the assessment of National Units and National Courses. Units take approximately 40 hours to complete and there are normally three units plus an external assessment in a National Course. (Some units may be 20-hour or 80-hour and that means that there may be more or fewer than three units in a course.) Units are assessed through internal assessments i.e. locally by the pupil's school, and courses are tested externally i.e. nationally by SQA examinations. Standard Grades are assessed nationally by the SQA.

Assessment in National Qualifications measures both knowledge and understanding, and practical skills and competencies including Core Skills where they are covered. Specific Standard Grades, National Units and new National Courses are options within the curriculum although there is guidance on the balance of modes of study which should be undertaken. Assessment may take the form of question papers, performances or projects leading to plans, products or reports.

All candidates who achieve SQA qualifications are awarded a Core Skills Profile that details their highest achievement to date in their Scottish Qualifications Certificate (SQC). Candidates can receive their first Core Skills profile when they are 15, but most get a profile at 16, after sitting their Standard Grade or new National Qualifications examinations at school, and they are able to build on this as they continue with education and training at a college or in the workplace. All Core Skills certification in Scotland is now based on the same national Core Skills framework. The profile reports the candidate's Core Skills achievements by component so certification is available even to those who do not complete a whole Core Skill. Candidates might achieve Core Skills through any Unit or Course that has been audited against the Core Skills framework and validated as fully covering one or more Core Skills component or Core Skill Unit.

Some special out-of-school schemes and projects have specially been designed to allow young people to demonstrate their mastery of Core Skills or have adopted Core Skills into existing programmes. The Duke of Edinburgh's Award Scheme is a tried-and-tested programme of extra-curricular activities for candidates between the ages of 14 and 25. It gives participants the opportunity to demonstrate and develop the five Core Skills. Participation in the scheme can be used as a vehicle for developing the Core Skill 'Working with Others' at Intermediate 1 or Intermediate 2 by planning, carrying out, reviewing and evaluating a task in the Expeditions section of the Award. There is a close correlation between the Expeditions (Service or Residential) section and the components of 'Working with Others'. Award activities can also make a significant contribution towards the Core Skills 'Communication' and 'Problem Solving'. The ASDAN (Award Scheme Development and Accreditation Network) is another way of giving young people the opportunity to try out a variety of challenges and to demonstrate their skills. The programme can be used as a vehicle for gathering and recording evidence for the Core Skills Unit 'Working with Others', and may provide opportunities to develop the other four Core Skills.

Standards for key competencies

In order to assist with Core Skill assessment, each Core Skill area has been described in detail. Nationally agreed criteria are available for each of these areas so that they can be assessed at each of the five levels.

Support for pupils with special educational needs

Priority Number 3 of the *National Priorities in Education* comes under the heading *Inclusion and Equality* and aims 'to promote equality and help every pupil benefit from education, with particular regard paid to pupils with disabilities and special educational needs and to Gaelic and other lesser used languages.'

As far as the acquisition of Core Skills is concerned, the Scottish Executive pays particular attention to pupils from socially disadvantaged areas and has introduced a number of measures that should ensure that they reach their educational potential by acquiring the necessary skills in literacy and numeracy. As of the school year 2002/03 two development officers will

assist education authorities and schools with the implementation of the National Literacy and Numeracy Strategies.

Participation in international assessment studies of key competencies

IEAP-1		1988	maths, science
IEAP-2		1991	maths, science
IEA	TIMSS	1995	maths, science
OECD	IALS	1997	literacy
IEA	PIRLS	1999-2003	reading, literacy
OECD	PISA	2000	reading, maths, science
IEA	TIMSS	2000-04	maths, science
OECD	PISA	2003	maths, science, reading

Latest developments in relation to key competencies

SCQF (The Scottish Credit and Qualifications Framework)

Mainstream Scottish qualifications are now being brought into a single unified framework known as the Scottish Credit and Qualifications Framework (SCQF). It brings together all the qualifications awarded and accredited by SQA and by Scottish degree-awarding institutions. Under the framework, all SQA qualifications are given a level and a credit value in SCOTCAT (Scottish Credit Accumulation Transfer) points. The levels go from level 1 (Access) to level 12 (doctorate), and the credit value is a reflection of the amount of learner effort usually required to obtain the qualification.

The main implications of the development of the SCQF for National Qualifications relate to:

- allocating National Units, National Courses and Clusters and Scottish Group Awards to SCQF levels;
- converting SQA credit values into SCOTCAT points (1 SQA National credit = 6 SCOTCAT points for National Courses and Units at levels 1-6 of the SCQF).

Also over a period of time, SCQF levels and SCOTCAT points will be recorded in all unit specifications, arrangements documents and supporting documentation and will be used in SQA reporting and certification.

Case Studies Publication

SQA has recently published *Working with Others: case studies of approaches in secondary schools*. This document was produced because many schools found that there were few opportunities for the automatic certification of 'Working with Others' through Units or Courses in the school curriculum. The case studies show a range of approaches to planning for the delivery and assessment of this core skill using the Core Skills Unit.

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http://www.scotland.gov.uk
http://www.scotland.gov.uk/whatwedo.asp?type=pub&topic=children

Scottish Qualifications Authority website (Centre Resources section): http://www.sqa.org.uk/

Learning Teaching Scotland website:
http://www.ltscotland.com/index.asp,
http://www.ngflscotland.gov.uk/nq/framework/coreskills.asp

Continuing Education Gateway website:
http://www.ceg.org.uk/main.htm
http://www.ceg.org.uk/progress/core/frm-000.htm

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ACKNOWLEDGEMENTS

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Key Competencies. A developing concept in general compulsory education.

Eurydice

Brussels: Eurydice

2002 - 182 p.

ISBN 2-87116-346-4

Descriptors: Skill, Learning, Compulsory Education, Primary Education, Secondary Education, Lower Secondary, Evaluation, Pupil, Certification, Remedial Teaching, Learning Difficulty, European Union

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